IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW MEXICO

UNITED STATES OF AMERICA, Plaintiff, vs. PATRICK DURAN, Defendant.	No. 1:14-CR-03762-WJ Pete V. Domenici U.S. Courthouse Bonito Courtroom Albuquerque, New Mexico Monday, August 26, 2019 10:00 A.M.

TRANSCRIPT OF PROCEEDINGS
DAUBERT HEARING RE: DEFENDANT'S PROPOSED EXPERT
VOLUME 3
BEFORE THE HONORABLE WILLIAM P. JOHNSON
CHIEF UNITED STATES DISTRICT JUDGE

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Proceedings reported by machine shorthand and transcript produced by Computer-Aided Transcription.

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(In Open Court at 10:15 A.M.)

THE COURT: This is United States vs. Patrick Duran, 14-CR-3762.

Would counsel enter their appearances for the record.

MR. MARSHALL: Good morning, Your Honor. Nicholas Marshall and Kyle Nayback for the United States.

MR. KOCHERSBERGER: Good morning, Your Honor. Don Kochersberger and John Samore on behalf of Mr. Duran, who is present. Dr. Joseph Scheller, the witness for today, is also in the gallery.

THE COURT: All right. Let me handle a couple of preliminary things before we continue with Dr. Scheller's testimony.

I took under advisement a previous objection to the scope of Dr. Hart's testimony. Dr. Hart was the treating physician of the child. He was not identified by the Government as an expert witness, and so there was an objection raised about Dr. Hart giving expert opinions because he wasn't identified as an expert witness.

I've decided to sustain the Defendant's objection. So Dr. Hart's testimony will be, in this case, will be limited to his role as the neuroradiologist in the case. However, in his area, in terms of a treating physician, he had to make decisions, and he made conclusions in the context of serving as a treating physician. So he will be allowed to give testimony

about his conclusions and what he did as a treating physician.

And some of that -- again, with medical doctors, it seems like there's always a little bit of overlap in terms of a fact witness giving some opinion testimony, but that's just the nature of the training that they undergo. In the course of treatment, they have to make and draw conclusions, and he's going to be allowed to explain why he did what he did as a treating physician. So I'll follow that up with a written order.

Now, there was also -- I mean, I understand the Government's motion to strike some of the, I think it was some of the exhibits that the defense submitted in advance of this hearing. I was trying to explain -- Document 166, which was the Memorandum, Opinion and Order Overruling Defendant's Objection to the Scope of the Daubert Motion and Granting Defendant's Request to Present Rebuttal Testimony, I went through it and I believe it's on Pages 3 and 4 that there was an issue about whether the defense was reading the Government's Daubert motion to only focus on two aspects of Dr. Scheller's opinions. That was that victims of child abuse are often found to have unexplained bruises, rib and limb fractures, scalp injuries, brain injuries and neck injuries, and that most subdural hygromas are not related to accidental or abusive trauma.

I ruled in favor of expanding -- in favor of the

Government on the overall objection that Dr. Scheller should not be allowed to testify based on Daubert and its progeny, in part because of methodology. And so in that regard, I'm allowing Dr. Scheller to do rebuttal testimony today in connection with allowing the record to be fully developed.

I'm overruling the Government's recent Motion to Strike the Notice of Foundational Material for testimony.

And then at the conclusion of the hearing, and I've got an order that's in the process of being finalized, but I'm going to require, because of the -- again, this Daubert, I think the initial hearing was back in November. So I'm going to require written closings, and I've set forth a schedule. I'm going to have the United States go first, since it's the United States' motion, and then defense, and then the Government may reply, and then I'm going to issue a written ruling on this.

I want to try to get this done as soon as possible, because I think this case needs to be prioritized. I mean, again, it's a difficult situation, and we're down -- we've got three judicial vacancies, and this isn't the only criminal case I've got by any stretch of one's imagination. But it's a 2014 case, and so I'm prioritizing this case in terms of bringing it to resolution one way or the other.

Anyway, that's how I intend to proceed. So with that, you may -- oh, yes, Mr. Marshall.

MR. MARSHALL: Your Honor, I have a question. In your order, Document 146, you had excluded a large number of defense's literature that they had attempted to supplement after the first hearing. I just want to make sure the Court's order today, I just want to make sure I'm not misreading. Does that overrule the previous order? Because much of what defense filed in the notice that didn't actually get filed is overlapping articles. So, many of those articles had previously already been excluded by the Court under Document 146, and it looked like a second attempt by defense to get those articles in before the Court.

And so I didn't know if the Court's new order is overruling 146, so that everything comes in, or if the articles and information that have previously been excluded are still excluded.

THE COURT: Well, again, I'm not interested in -- as a general rule, you know, once a trial Judge rules, I'm not interested in an end run around a ruling. But again, the problem is there was this issue over the scope of the overall Daubert motion.

So I'm going to give you a standing objection on it. I'm going to allow this testimony to go forward so there's a record developed, and then I think to the extent that the Government is claiming that the defense is doing an end run around an earlier ruling and that those matters should not be a

part of the record, or should not be considered, then that's why I'm having the order on the written closings handled that way.

MR. MARSHALL: Okay.

THE COURT: So I'm going to allow the record to be made so it's of record, and then when you all walk out of here today, there's going to be an order on how the written closings are going to be handled. And then at that point, I'm going to issue a ruling on the original Daubert motion.

So with that, you may call Dr. Scheller.

MR. KOCHERSBERGER: Two things briefly before I call Dr. Scheller, Your Honor. With respect to the articles, Document 146 excluded them because Dr. Scheller didn't mention them. So obviously our intent today is to have him mention the things that are important so that they don't have to be excluded.

THE COURT: Right, but I'm not going to prohibit them from raising an issue about --

MR. KOCHERSBERGER: I understand.

THE COURT: All right.

MR. KOCHERSBERGER: I just wanted to make clear why I don't think I'm circumventing your order. I'm trying to help comply with your order.

Secondarily, I think that the reason that this thing may have expanded beyond sort of out of controlness is that I

think Dr. Scheller, in other cases, has had opinions about the diagnosis of AHT, sort of in general, and whether or not that should be a good thing and all these sorts of things. He's not testifying about that in this case, and it's not part of the opinion that we filed. So I just want to make clear that that's not what we're trying to do here. And we'll have Dr. Scheller come up and testify, but within the scope of notice that we filed.

THE COURT: All right.

MR. KOCHERSBERGER: The defense will call Dr. Scheller.

(JOSEPH SCHELLER, DEFENSE WITNESS, SWORN)

MR. GARCIA: Please have a seat, sir, and state your full name for the record.

THE WITNESS: Joseph Scheller. S-c-h-e-l-l-e-r.

DIRECT REBUTTAL EXAMINATION

BY MR. KOCHERSBERGER:

Q. Good morning, Dr. Scheller.

A. Hello.

Q. As you recall, you testified in this same case back in, I think it was November; right?

A. Yes, sir. 2018.

Q. So I'll try not to go over the same material to the extent that we can avoid that, but some of it may be foundational, including what I want you to talk about a little bit right now,

which is just, what is your specialty within medicine?
A. I'm a pediatric neurologist. So that's a specialist pediatrician in diseases of the brain, spinal cord, nerves, muscles, and development.
Q. And as part of that professional specialization, what have you done in your medical career professionally? Like, what type of practice do you have?
A. For most of my 32 years, I've been working for children's hospitals, and that was in San Diego, California, in University of Maryland in Baltimore, and then at Children's Hospital in Washington, D.C.

And what I'm doing in those places is, I'm seeing inpatients with severe neurological problems, children who might have brain infections or strokes, or have been in bad car accidents. And then I also see outpatients, which are either follow-ups from the hospitalization or are more minor things like headaches, episodes of fainting, back pain, questions of development, that kind of thing.

Q. Do you -- is your practice specific to child abuse cases?
A. No, no, no, not at all. In fact, that's a small percentage of all the cases that I've seen in my practice over the 32 years.
Q. Did you have an opportunity to review Dr. Strickler's testimony from the last time we held a portion of this hearing?
A. Yes, sir.

Q. Are you familiar with Dr. Strickler's medical specialty?
A. Sure. That is child abuse pediatrics.
Q. How does your practice differ from that of a child abuse pediatrician?
A. Child abuse pediatricians get extra training. Every pediatrician is trained to recognize child abuse, or suspicious findings that suggest child abuse. Child abuse pediatricians get extra training in recognizing those, and that involves possibly maltreatment via sexual problems, via feeding problems, via physical force, emotional force. So child abuse is sort of a broad type of -- it presents with a broad range of possible findings or issues that suggest it.

Child neurology -- so, one small part of child abuse pediatrics is diagnosing abusive head trauma. Child neurology is involved with all aspects of head trauma. So that could be accidental falls, it could be children who stop breathing as part of a seizure, it could be children who did suffer physical abuse. So you get to see the whole spectrum of head injury and brain problems, and not just the ones that are suspicious for abusive head trauma.

Q. One of the things that we're here to talk about is the methodology that you employed to reach the various conclusions that you have in this case. I want you to talk, first, about in your regular practice of medicine, what is the methodology you use to come to medical conclusions?

A. So, you get the best history that you can as far as the medical problem, and that could be a story from the patient, if it's an older patient, or from the caregiver, a mom or dad if it's a younger patient. Then one performs a physical exam in order to try to narrow down where the problem might be based on what you learn from the history. One then does laboratory tests, which are usually blood and urine tests. They might also be, in the case of a neurologist, brain wave tests or other electrical tests that neurologists do.

So that's part number three. History, physical, laboratory tests. And then radiology, which is just imaging. Take pictures of body parts that you think might be affected, and then try to see if those pictures are relevant to a diagnosis.

Q. Is that widely accepted as the way all physicians do diagnosis?

A. Oh, yes, sir.

Q. Does your -- first of all, you said you reviewed Dr. Strickler's testimony, and I think she testified quite a bit about the methodology she used to reach her conclusions. Did your methodology that you used to reach your conclusions differ from hers in any way?

A. No, only from our experience. But we actually used the same methodology.

Q. One of the things that Dr. Strickler was able to do that

you weren't was to observe the patient in this case personally. First of all, how often does that happen in your practice?

A. It rarely happens. In other words, I do phone consults and I do consults by Skype, or those types of things. But it's rare. Ideally one would like to see the child who is having the problem and do a hands-on physical examination, and Dr. Strickler did have that advantage. She was able to do that and I was not.

Q. In some situations, do you still render diagnosis despite the fact that you haven't seen the patient personally?

A. Yes, both clinically based on descriptions of what I hear from treating physicians, let's say in an emergency or in another clinic, or based on reviewing the record weeks or months later.

For example, there are children who, let's say -- I'm in Maryland. Let's say a child was living in another state and had the whole neurological problem and hospitalization in that other state, and then moved and now they're coming to me for either a second opinion or continuing care. So I would need to review everything that they had undergone in the other state, and that would be the history, the physical exam, the laboratory tests, and the radiology, and then either agree with the previous diagnosis or say, perhaps they didn't consider something and you might consider this diagnosis.

So it does happen in my real practice. And then I do

medical-legal work like this one, and certainly it happens a lot in medical-legal.

Q. Is there anything that you lose in the process by not having personally observed the patient, and if so, what would those things be?

A. Well, it's almost like an interview, a job interview, or a date, you know. There's only so much that you can get from the information that you read online or that you're reading from data about a person. And then when you get to meet a caregiver or a child, then you just get a better sense, you can get a better sense of what's going on.

Q. Is there anything you gain by not having that personal contact?

A. Yes. And that is, very often while you're in a hospital setting and there's a lot of urgency and excitement about what's going on, people will say things that are not exactly accurate. They might try to give you their impression, which is not an unbiased impression. And so in that, I'll call thrill of the moment, one might struggle to see a bigger picture. And that's something that if you wait a week or a month or several months and then review the medical records, then you're out of that sense of urgency and you can really analyze all the findings.

Q. For your job in diagnosing pediatric neurology issues, is there a particular diagnostic sort of framework that you

utilize?
A. I didn't understand the question.
Q. I think that you had told me in earlier times, you called it a diagnostic puzzle, but it's a sort of framework that you use to diagnose neurological issues. I think you may have touched on it earlier in answering one of my other questions. But I wanted to be clear as to what that was, since your methodology is what we're largely talking about here.
A. Right. So I would call it a four-pronged puzzle or four-pieced puzzle, if we're imagining a child's puzzle, and piece number one is what you learn from the history, and sometimes that leads a person straight into a diagnosis. And sometimes it's what you learn from the physical exam, and that leads a person straight into a diagnosis. Laboratory studies, like blood tests, urine tests, electrical tests, that can lead somebody into a diagnosis. And then the fourth are the pictures, the images.

So sometimes it's one of those four, but in most cases it's a combination of the four. So you take the history, physical, laboratory tests and radiology, put them in combination, and then based on experience and training, you say, well, that leads to my diagnosis, or possibility of diagnosis of this and possibly other things.
Q. Is that something peculiar to you or is that just sort of how medicine works?

MR. MARSHALL: Objection, Your Honor. It seems like we're starting over from the very beginning of Daubert. We have not progressed to where we're rebutting the information that has come in with the other -- rebutting the information that we're supposed to be doing at this point. This seems like a brand new recitation of a rebuttal direct testimony -- or I'm sorry, a Daubert direct testimony.

THE COURT: What's your response?

MR. KOCHERSBERGER: I have three more questions about the background with respect to the methodology that he utilized, and then we are going to get into his specific opinions.

THE COURT: All right. As long as you're moving in that direction fairly quickly, then I'll overrule.

MR. KOCHERSBERGER: My concern was just that it's been almost a year since he was last here and it needs a little bit of a flow.

BY MR. KOCHERSBERGER:

Q. So, anyway, you were saying, is that peculiar to you or is that a typical thing, that diagnostic process that you use?

A. Definitely true for all the neurologists that I've ever worked with, and I've worked with a lot of other pediatric specialists and they do the same thing, whether they be cardiologists or endocrinologists, or whatever it is.

Q. One of the things that I think came up during

Dr. Strickler's testimony was whether or not you reviewed a complete set of records for the particular patient in this case. Is there anything that you're aware of that exists with respect to this patient that you did not have an opportunity to review to render your opinion?

A. No, sir.

Q. All right. Let's move into, as Mr. Marshall suggested, your actual opinions in this case, and we'll try to go through them in a systematic process here.

But before we do that, can you just sort of summarize, before we get into that detail, sort of the overall Reader's Digest version of what your opinion is in this case?

A. I always get confused. Is it "C.A." or "A.C.," and I think it's "C.A." He came to the hospital because of a seizure. That seizure was caused by a complication of a chronic condition. And then once that chronic condition -- I'm sorry; once the complication resolved, then "C" lived happily ever after. And I can elaborate on that as needed, but that's basically my opinion.

Q. Throughout the course of this case, did you review specific medical research literature to help inform your opinions in this case?

A. Well, as I was aware of medical research literature, because that's -- in order to stay current, I think almost every doctor will read the pediatric journals, and in my case

the neurology journals, sometimes the neurosurgery and some other journals.

MR. KOCHERSBERGER: All right. Your Honor, I think to make this go more smoothly, can I give the Government the binder full of the articles that we disclosed, put a binder up on the witness stand, and then if Dr. Scheller wants to refer to one of those, he can identify it and then we'll go through the process of whether or not it should be admitted?

THE COURT: Sure.

MR. KOCHERSBERGER: Just for the Court's information and for my colleague, these in this binder are numbered the way they were in the notice that we provided to the Government. As we move to admit them, I will mark them as actual exhibits in this case, and then Your Honor can rule on whether or not they should come in as exhibits. But at this point, it's just the binder full of materials.

As Dr. Scheller refers to them, and I don't expect he's going to refer to all of them, but the ones that he does say that were helpful for his opinion, then I'll go through and attempt to admit them as exhibits. Does that make sense and is that acceptable?

THE COURT: Do you object to that?

MR. MARSHALL: Yes, Your Honor, with the objections that we noted in our motion. But additionally, this is beyond the scope of rebuttal, again. This is -- they are now trying

to reintroduce Dr. Scheller in a sense almost like a brand new expert, because they're trying to lay the foundation that they couldn't and didn't lay the first time. They're not rebutting any single point that was mentioned by Dr. Hart or Dr. Strickler.

THE COURT: Yes, what is the -- he reviewed Dr. Strickler's testimony. This was noticed up for rebuttal. So, when are we going to get there? In other words, how does this have anything to do with rebutting --

MR. KOCHERSBERGER: I can explain that, Your Honor. The reason we had to bring Dr. Scheller back is because in his original testimony, he addressed just two limited areas of his opinion. Several other areas of his opinion were attacked by Dr. Strickler and the Government in the other phases of this case with Dr. Hart and Dr. Strickler, we're going to talk about those other opinions outside of the two that we've already talked about, and in order to do that, we need to have Dr. Scheller give the foundation for those other opinions, which are contained within these articles, some of them. Some of them he probably won't need to use. But since I don't know exactly what the Government is going to focus in on, these are all of the articles that he identified as being salient to his opinion.

THE COURT: Yes, but how is this rebutting Dr. Strickler's testimony?

MR. KOCHERSBERGER: Dr. Strickler challenged opinions outside of the two that we had presented testimony about at the first hearing. These are the foundational materials for those other opinions that are contained within his disclosure outside of the two that he actually already testified about.

MR. MARSHALL: And Your Honor, the defense was on notice of all of the information. In five of the subparagraphs in our notice, we talk about all of Dr. Scheller's opinions. That's also in our introduction, we're talking about all of Dr. Scheller's opinions. They were on notice of all of them. And it's disingenuous to state that they only talked about two. On direct examination of Dr. Scheller the first time, they went through all his points in his report. So they talked about all of them. So we should have had the foundation for all of them at that point. Trying to backdoor a foundation that wasn't provided in the first direct examination for the Daubert hearing is unfair. The Court excluded it once before, and we're asking you to exclude it again.

MR. KOCHERSBERGER: And we've already had this argument, Your Honor.

THE COURT: Well, I know, but part of it is, this whole thing seems to be so much more complicated than it needs to be.

You know what, I'm going to take a break, I'm going to go look at some of the transcript of the earlier hearing,

and then I'm going to make a ruling, and then we're going to try to get through this thing.

(Recess was held at 10:43 A.M)

(In Open Court at 11:23 A.M.)

THE COURT: All right. I'm going back to Document 92, which was the United States' original Motion in Limine regarding, and it's entitled, Regarding the Admissibility and Scope of Defendant's Proposed Expert Testimony, and the expert the Government said that this motion pertained to is Dr. Scheller. I'm reading from the very first paragraph.

It says: "The United States requests that as a matter of law, this Court preclude Dr. Scheller from testifying in this matter at any pretrial motion hearings or at trial because he lacks the qualifications to testify regarding the subject matter and because his opinions are not rooted in science and have not and cannot be tested."

So as far as -- and for example, in Paragraph 5, the Government then honed down on some of the examples in Dr. Scheller's report. But defense counsel was on notice as a matter of law that the United States was seeking to preclude Dr. Scheller from testifying at all. So that's a ruling I made earlier, and I'm sticking by it.

Now, after Dr. Scheller's testimony on direct, on November the 30th the Defendant filed, and it's captioned, "Mr. Duran's Amended Exhibit List for Daubert Hearing." And

it's Document 126. It was filed, I think it was November the 30th, 2018, after the first go-round of Dr. Scheller's testimony.

The Government then followed up with Document 14 -- I'm sorry. The Government then filed a motion to strike the amended Daubert list. That was Document 129 filed on December 7, 2018. And then I entered an order on that, it's Document 146, granting in part and denying in part the Government's motion to strike the amended exhibit list.

What I did allow was, there was a reference in the earlier November 19th hearing, and I ruled that the defense could provide the Massachusetts case, Commonwealth vs. Epps, which was referenced in the record, and submit it as Defendant's Exhibit 4. And then I said at the hearing, if there are other cases from other courts where Dr. Scheller's testimony is the subject of a court opinion, then I was going to allow the defense to submit supplemental case authority. And then I admitted, I think it was Exhibits 11, 13, 16, 26 and 27.

So we were talking about -- and then I said in that order that I agreed with the United States that there was no evidence presented during the evidentiary portion of that hearing to indicate that Dr. Scheller was aware of or considered the material in the amended exhibit list, Document 129, at Page 3. And I said because Dr. Scheller was

not questioned on direct or on cross-examination about these submissions, that I didn't consider it appropriate -- or I was ruling in favor of the Government on this because there was nothing in the record that at least the medical literature part of the Defendant's amended exhibit list for the Daubert hearing was relied upon by Dr. Scheller in his opinions.

Now, I'm going to read -- this is out of Black's Law Dictionary. "Rebuttal evidence: Evidence given to explain, repel, counteract, or disprove facts given in evidence by the opposing party." And so that was the purpose of today's hearing. I think at the time Dr. Strickler testified, Dr. Scheller was out of the country. So this was for rebuttal testimony. And, again, I've read the definition of what rebuttal evidence is.

Now, the Government has filed a Motion to Strike Notice of Foundational Material for today's hearing, but at this point, I have no way of going over this list of all of -- let's see. These are articles beginning with, let's see, 1 through 32. I have no way of comparing these 32 proposed articles, whether they're learned treatises or whatever they are, with what was on the original list. So I think the easiest way for this to proceed is I want to hear what the rebuttal opinion is, and then if some of this was relied upon in support of the rebuttal, then I'll let you make an offer at that point and I'll consider the objection and then rule on it.

But I'm not going to all of a sudden admit all of this stuff and then try to sort through and figure out whether it should have been given at the first hearing, because it wasn't offered then, and I'm not going to go back and redo that.

So, now, let's have Dr. Scheller resume the stand and let's hear what the rebuttal opinions are, and then if some of the material is relevant and in support of the opinion, then you can offer it. That's how we're going to proceed.

MR. KOCHERSBERGER: May it please the Court.

THE COURT: You may proceed.

BY MR. KOCHERSBERGER:

Q. Dr. Scheller, we're going to talk about some of the opinions that are reflected in your original letter that was Government's Exhibit 3 at the prior hearing, specific ones that Dr. Strickler took issue with in her testimony.

MR. KOCHERSBERGER: May I approach the witness with Exhibit 3, Your Honor?

THE COURT: Sure. Exhibit 3 is his original opinion; right?

MR. KOCHERSBERGER: That's correct, Your Honor. And I believe it was Government's Exhibit 3.

THE COURT: All right.

MR. KOCHERSBERGER: Would it be helpful if I cite to Dr. Strickler's testimony for Your Honor, as to how this is

rebuttal, or at least give you the page and line number?

THE COURT: Yes, that would be helpful, if you've got it handy.

MR. KOCHERSBERGER: I do. I won't read the quote from Dr. Strickler, but I'll at least point you to the record where she talked about the thing. That's probably the easiest way to handle that.

BY MR. KOCHERSBERGER:

Q. So, in Dr. Strickler's testimony, looking at your opinion here, you stated: "Infants who are victims of child abuse are often found to have unexplained bruises, rib and limb fractures, scalp injuries, brain injuries, and neck injuries," and then you said "C" had none of these.

At Page 84, Line 22, among other places, it appeared that Dr. Strickler challenged your testimony by claiming that there was a brain injury. So, let me ask you, how do you define a brain injury with respect to this portion of your opinion?

A. So in 2019, the best way to document a brain injury is to observe the presence of areas of brain compromise on the MRI test. The MRI test has a section of the test called the diffusion portion of the test. For example, if somebody has a stroke, somebody has a brain tumor, somebody has a brain infection, and somebody suffers a serious head injury that causes brain injury, then those areas of the brain that are compromised will show up on the MRI portion of the test. And

in "C's" case, there were none of these areas of brain compromise documented on his MRI test.

Q. And does that differ from the discussion that we've had and will be having with respect to hygromas and hematomas? And if so, how?

A. Sure. The brain is the brain, and then there's a space in between the brain and the inside of the skull. Something can go on in that space and cause a problem, but that doesn't mean that there's something that has injured or compromised the brain.

Q. All right. And how did you determine that there was no evidence of brain injury? I think you mentioned it, but just to be clear, what methodology did you employ to make that determination?

A. The methodology that neurologists use which is careful looking, observation, of the diffusion portion of the MRI test.

THE COURT: I didn't hear you. What portion of the MRI test?

THE WITNESS: It's called diffusion, and it represents a method that the MRI is able to look at areas of the brain that have been compromised.

BY MR. KOCHERSBERGER:

Q. Okay. Are those the same images that you talked about in your initial testimony that demonstrate the hygromas, or is it a different image all together?

A. Well, an MRI is hundreds of images, and the series that demonstrates the hygromas is a different series, but it's all part of the same. The child was in the scanner for an hour and they did all these techniques to document various problems that one might be able to notice.

Q. Did you have anything different that you relied upon to make this conclusion than Dr. Strickler or Dr. Hart had in their record?

A. No, it was the exact same images.

Q. Next, you indicated that "C's" head CT scan and MR scan were misinterpreted to demonstrate chronic or subacute subdural hematomas (blood clots) when, in fact, the scans revealed chronic subdural hygromas. Dr. Strickler testified that you were wrong. Page 94, Line 12 is where that starts.

But to try to have this make sense, what is your understanding of how the United States' witnesses interpreted the MR and CT scans with respect to the hematoma/hygroma issue?

A. Sure. So, again, we're talking about a collection of something that is sitting in between the brain and the inside of the skull, something that doesn't belong there. May I use an analogy?

Q. Sure.

A. If I see a person in uniform from a distance and I recognize that uniform as a military uniform, I can say, I think that person over there is in the military. If the person

next to me says, well, I know that person is in the Navy, if that person has no better vision than me, then that's taking a generality and making it into something specific.

So this is the difference of opinion I have with Drs. Strickler and Hart, is that a subdural hygroma is a general term for a fluid collection that's in a space where it doesn't belong, and that's all you can see when you look at "C's" MRI scan.

Drs. Strickler and Hart are saying, no, that's something specific. It's not just a fluid collection, it was a fluid collection that was once an acute blood clot and has now evolved or degenerated into a chronic blood clot. So they're giving it a specific label, and I'm giving it a general label because I don't believe you can make a specific call from what that looks like.

Q. All right. And what was the -- it's sort of baked into what you already said, but just to be very poignant about it, what methodology did you use to reach your conclusion about the identity of what you saw on those images?

A. So first and foremost, experience with looking at MRI scans, and then awareness of the literature that there is, indeed, something called a chronic subdural hematoma, and that there is, indeed, something called a chronic subdural hygroma, which is a less specific term and one that is widely used.

Q. Are there any specific articles that you recall reviewing

in relation to this particular subject matter?
A. Sure, there's a number of them. There's a number of articles by a Dr. Lee written in the '90s, early 2000s, and then the last one was around 2014. And his first initials are K.S. Lee.
There is an article by Dr. Cho, C-h-o, that I referred to, and there is --
Q. Let me stop you there. You said Dr. Cho; right?
A. Yes. I think that was in and around 2005.
MR. KOCHERSBERGER: All right. This is in the list that we provided at No. 22. I'm going to mark it for identification here as -- let me get my exhibit stickers.
THE COURT: Is 22 on the exhibit list?
MR. KOCHERSBERGER: It's No. 22 on the list of foundational materials. I'm going to give it an exhibit number now.
THE COURT: I meant to say foundational materials.
MR. KOCHERSBERGER: And my understanding is that the defense -- unfortunately, we both used numbers, but the defense is up to No. 29. So I'm going to mark it as that.
Can I give the witness one of these binders, and then we'll use the one that comes out of binder as the actual --
THE COURT: Yes, that makes sense.
THE WITNESS: There's one by my seat if you're running low.

MR. KOCHERSBERGER: No, I've got one, and you've got one.

BY MR. KOCHERSBERGER:

Q. I've handed you what's now been marked as Defense Exhibit 29, which corresponds with the article that was No. 22 on the Notice of Foundational Materials. Is that the Dr. Cho article that you were just referring to?

A. Yes, sir.

Q. And what type of a publication --

THE COURT: Just a second. So it's Exhibit 29?

MR. KOCHERSBERGER: It's Defense Exhibit 29. Unfortunately, the Government ended up on Government's Exhibit 29, so their next number is 30. We should have used letters, and I apologize. We didn't do that.

BY MR. KOCHERSBERGER:

Q. As I was saying, what type of a publication is this article from?

A. It's from a Korean neurosurgical journal that's written in English.

Q. Is that a peer-reviewed -- are you familiar with the journal, by the way?

A. Sure.

Q. Is that a peer-reviewed journal?

A. Yes, sir.

Q. Is it the type of thing that people in your profession

normally rely upon for medical literature of this sort?
A. Neurologists, yes.
MR. KOCHERSBERGER: And so at this time, Your Honor, I'd move to admit Defense Exhibit 29.
THE COURT: Which is the article out of the Korean -- I'm sorry, what was the name of it?
THE WITNESS: Journal of Korean Neurosurgery.
MR. KOCHERSBERGER: And to help Your Honor so that you have the full name, it's the one that was identified as No. 22 on that list that we provided earlier.
THE COURT: Okay. Now, does the Government wish to state an objection?
MR. MARSHALL: Yes, Your Honor. At this point, I don't think a foundation has been laid about how it supports his finding and how it refutes anything that was in rebuttal. He stated that this is a journal article. He hasn't mentioned in any way how he's relied on it and how it was useful in the formation of his beliefs.
THE COURT: Lay a little more foundation.
MR. KOCHERSBERGER: Sure, Your Honor.
BY MR. KOCHERSBERGER:
Q. So, what's the significance of this article with respect to your opinion?
A. This article, like the other ones I quoted, documents and demonstrates that there is such a thing called a chronic

subdural hematoma, which is, again, just an old blood clot, and there's something called a chronic subdural hygroma, which is an old collection of fluid, and that there is confusion between the two, and that they are two separate things.

Q. And is this article, or the subject of this article, something that you reviewed in order to help inform your opinions in this case?

A. Well, it's something that I was aware of. Again, because I deal with fluid collections in the brain as a part of my practice, I'm aware of the literature. But I supplied this article in order to support that awareness that I have.

MR. KOCHERSBERGER: Okay, now we move to admit the exhibit, Your Honor.

MR. MARSHALL: I don't see how that title has anything related to what the defense has even mentioned. Furthermore, I have been scanning the article, and he keeps referring to the term chronic subdural hygroma. I don't see the term chronic. And if we're dealing with definitions, these special medical definitions and trying to say that there's some sort of difference, I think the chronicity issue is important. And this article does not support his chronic subdural hygroma findings.

THE COURT: You're going to ask him that on cross-examination; right?

MR. MARSHALL: Yes, sir.

THE COURT: So doesn't the objection at this point go to weight? In other words, I'll admit it for purposes of this hearing. The Government's objection, in my view, goes to weight.

(Defense Exhibit No. 29 admitted.)

MR. KOCHERSBERGER: Thank you, Your Honor.

BY MR. KOCHERSBERGER:

Q. I believe you also mentioned -- did you say Dr. Lee was another one?

A. Yes. K.S. Lee. And there are several articles written by that gentleman. I could do the most relevant one, to save time. I'll leave that up to the Court. Or we can go through -- I think there are three or four articles in this binder from that author.

Q. Let me find them and show them to you here. So, if you look at the document that was identified in the Notice of Foundational Materials as Document 16, I'm going to mark that as Defendant's Exhibit 30 for the purposes of this hearing. If you could, just pull that out of the book so I can put the exhibit sticker on that, Dr. Scheller.

MR. KOCHERSBERGER: May I approach, Your Honor?

THE COURT: You may.

A. Yes, I'm looking at it.

BY MR. KOCHERSBERGER:

Q. Can you pull it out of the book?

A. Oh, sure.
Q. Is this one of the K.S. Lee articles that you were just discussing?
A. Yes, sir.
Q. All right.
MR. MARSHALL: I'm sorry; I got confused on the numbers. This is Exhibit 30, but what was the number --
MR. KOCHERSBERGER: 16.
THE COURT: 16 in the binder.
MR. MARSHALL: Thank you.
BY MR. KOCHERSBERGER:
Q. And with respect to your opinions in this case, what is the significance of this particular publication for your testimony?
A. This specific one, or the series? Because they really are a series that describes Dr. Lee's experience and research into understanding the difference between a chronic subdural hematoma and a chronic subdural hygroma. So that includes this article, which is Exhibit 30, Defense Exhibit 30, published in a journal called Brain Injury in 1998. But it also includes --
Q. We'll get to the other, but we have to do this sort of systematically for the record. You said there's a series of articles, of which this is one. It's contained in the Brain Injury journal; is that correct?
A. Yes, sir.

Q. Is that a peer-reviewed journal?
A. Yes, sir.
Q. Is it a journal of the type that you review in your profession as a pediatric neurologist?
A. Yes, sir.
Q. Is it considered a learned treatise for those purposes?
A. Yes, sir.
MR. KOCHERSBERGER: I move to admit Exhibit 30.
MR. MARSHALL: No additional objections other than what's already been made. And just for the record, we're not going to be objecting to the quality of the journals, so I don't know if that will save some time. The objection is how it relates foundationally to Dr. Scheller.
THE COURT: Okay. I'll note the objection, and I'll admit it for purposes of this hearing, Exhibit 30.
(Defense Exhibit No. 30 admitted.)
BY MR. KOCHERSBERGER:
Q. I'm going to ask you to pull out what's No. 18 in the book in front of you, so that I can identify it as Defense Exhibit 31.
THE COURT: Are these the Lee articles?
MR. KOCHERSBERGER: Yes, Your Honor.
THE COURT: Do you want to do them as a group, the rest of them?
MR. KOCHERSBERGER: I can, if that's easier, sure.

THE COURT: I mean, separate exhibits, but offer them at the same time.

MR. KOCHERSBERGER: Okay. So that one is No. 18, and then I believe the next one is No. 19.

BY MR. KOCHERSBERGER:

Q. Is that correct, Dr. Scheller?

A. Yes, sir.

Q. Those are both Lee articles in the series you were just describing?

A. Yes. And then there's a fourth one, as well.

Q. So we will mark what was originally 18 in the Notice of Foundational Materials, as Defense Exhibit 31.

MR. KOCHERSBERGER: May I approach?

THE COURT: Yes. Feel free to go back and forth as necessary.

BY MR. KOCHERSBERGER:

Q. And if you could remove No. 19 from the book in front of you, we'll mark that as Defense Exhibit 32.

All right. So with respect to Defense Exhibits 30, 31 and 32, does that include all of the documents in the series of Lee articles that you just described?

A. One more, sir. And that's in the notebook labeled 20.

Q. 20? Okay. Can you pull that out? We'll mark that one as Defense Exhibit 33.

MR. KOCHERSBERGER: And to be clear, now that we have

all of these, we'll move to admit all of the series that we just discussed, which are Defense Exhibits 30 through 33.

THE COURT: Same objection?

MR. MARSHALL: Yes, Your Honor.

THE COURT: I'll note the Government's objection for the record, but they'll be admitted for purposes of this hearing, for the same reason as I admitted Exhibit 30. And for the record, then, Exhibits 30, 31, 32, 33, and was it 34? What's the last one?

MR. KOCHERSBERGER: Just through 33, Your Honor.

THE COURT: 33. Those four exhibits are the series of articles authored by Dr. K.S. Lee?

MR. KOCHERSBERGER: Correct, Your Honor.

(Defense Exhibits No. 31, 32 and 33 admitted.)

BY MR. KOCHERSBERGER:

Q. Dr. Scheller, the purpose of the series of articles, now that we have them, and how that influenced your opinion in this case, is what?

A. Dr. Lee documents very clearly in that series how subdural hygromas develop, how they become chronic, how they sometimes turn into acute subdural hematomas, and if they do, then over time they will also turn into chronic subdural hematomas. And so all three are valid possibilities, and sometimes they exist without one another and sometimes they all exist together.

Q. All right. The next portion of your opinion -- again, you

can follow along with Government's Exhibit 3 -- indicates: "Pediatric neurologists and neurosurgeons encounter these often in practice when infants are referred for larger than expected head circumferences. Some develop as a result of birth, others for no known reason." Dr. Strickler had some concerns about that opinion, and that's located at Page 95, Line 19, of her transcript.

First, when you say that pediatric neurologists and neurosurgeons encounter these, what is the "these" that you're talking about in your opinion here?

A. Fluid collections between the brain and the inside of the skull, and specifically subdural hygromas.

Q. And what is the basis for your understanding of these experiences that pediatric neurologists and neurosurgeons have?

A. Well, my own experience, and then I'd refer you to an article which is No. 28 in the packet, and it's written also by a Dr. Lee, published in 2018.

Q. All right, let me mark that as Defense Exhibit 34. How does Defense Exhibit 34 pertain to your opinion with regard to hygromas encountered in the practice of neurosurgeons and neurologists?

A. Well, this is a practice of neurosurgeons, and they describe their experience at their hospital of diagnosing and treating patients with this exact condition.

Q. Was there another that you were indicating that relates to

this part of your opinion?
A. Yes, sir. A similar experience was had by a Dr. Hellbusch, H-e-l-l-b-u-s-c-h, and that is File No. 30 in the packet. And again, Dr. Hellbusch is a neurosurgeon, so he describes his practice.
Q. We'll mark what was previously noticed as Article 30 as Defense Exhibit 35.
It looks like you took this Hellbusch article from Tab 31, right, not 30, just to be clear?
A. Could be. That's right.
Q. Nonetheless, it's Defense Exhibit 35, and the import of Dr. Hellbusch's article, with respect to your opinions related to the experience of neurosurgeons and neurologists, is what?
A. Identical to what I learned from the Dr. Lee article of 2018, which was the previous exhibit. Not K.S. Lee, but the other Lee.
Q. As I under- -- were there any others?
A. There's just one other, and that is, I believe -- and I was going to say No. 30, but now I'm not sure. It's an article Dr. Wiig, W-i-i-g, and that is an epidemiologic or population-based study of children with large heads in Norway.
Q. All right. Then we'll mark that article by Dr. Wiig that was identified in the Notice as No. 30 as Defense Exhibit 36.
MR. KOCHERSBERGER: We move to admit those three articles, 34, 35 and 36, at this time, subject to their

objections.

MR. MARSHALL: And again, Your Honor, the objection to this one is foundation. These are all related to hydrocephalus or BESS. Dr. Scheller says that "C.A." does not have this condition, so their relevance on this proceeding seems moot.

Dr. Plunkett had initially proposed the possibility of the child having BESS, but the doctors from the prosecution side, as well as Dr. Scheller, seem to be in concurrence that this is not a condition that "C" had. So the relevance of these articles it seems is meaningless in this case.

THE COURT: I'm sorry, what's the condition?

MR. MARSHALL: Hydrocephalus, or BESS. In Dr. Scheller's first testimony -- and that stands I think for benign extra either subdural or subaxial space. In Dr. Scheller's first time here, about a year ago, he said that "C" did not have that condition.

THE COURT: How is it relevant, then, if everyone is in agreement?

MR. KOCHERSBERGER: I don't know if everyone is in agreement, so I guess we'll ask Dr. Scheller.

BY MR. KOCHERSBERGER:

Q. Is that an accurate representation of your opinion with respect to this case?

A. The other attorney did quote me correctly, that I did not

believe that "C" -- I don't believe that "C" had the excess fluid condition between the brain and the first membrane. May I explain just to make it clear?

Q. Yes.

A. Fluid can accumulate in all kinds of wrong places and cause a child's head to get too big. One of the places it can accumulate is immediately outside the brain underneath the first layer of covering, the first layer I call the ceiling of the brain. So in between the brain and the ceiling, a fluid accumulation would be called BESS, as the other attorney suggested, and "C" did not have that.

Another type of fluid accumulation is in between the ceiling and the roof, which I would use as an analogy to the place under the dura, subdural, which I'm talking about the subdural hygroma, and when that happens, fluid accumulates as well. It's just in a different compartment. And that's what I've been suggesting that "C" has.

The term that the other attorney used, I'd say very reminiscent of Dr. Strickler and Dr. Hart, is that he used a general term and then a specific term. Just like I gave the analogy with the uniform, hydrocephalus just means too much fluid. Too much fluid could be between the roof and the ceiling, or too much fluid could be between the brain and the ceiling.

So I don't want there to be any confusion. Hydrocephalus

is just a general term. BESS, as the other attorney said, is a very specific term, and I will say, and did say, that "C" did not have BESS according to what I saw in the records.

Q. And these particular articles that were identified as Defense Exhibits 34, 35 and 36, I believe, are those restricted to BESS or the more general term that you were just talking about, the hydrocephalous?

A. Some talk about hydrocephalous in a general term, and some talk about both hydrocephalus from too much fluid between the roof and the ceiling, or too much fluid under the ceiling.

MR. KOCHERSBERGER: With that explanation, then, we renew the motion to admit.

THE COURT: Well, the relevance is very limited, because I guess everyone is in agreement that that condition that's referred to as BESS is not applicable in this case. It's got a limited relevance, but all admit it for purposes of this hearing.

(Defense Exhibits No. 34, 35 and 36 admitted.)

MR. KOCHERSBERGER: I'll just ask one follow-up question for Dr. Scheller. Hopefully I'm understanding correctly.

BY MR. KOCHERSBERGER:

Q. Dr. Scheller, you're saying that "C" did not have BESS, but that he did have a different type of hydrocephalus that's reflected in these articles; is that correct?

A. Yes, sir.
Q. Okay. Next in your opinion you say that most are not related to accidental or abusive trauma. Dr. Strickler disputed this. It starts at Page 99, Line 20 of the transcript.
First, when you say most, most what are you talking about in your opinion?
A. Most chronic subdural hygromas.
Q. So most chronic subdural hygromas are not related to accidental or abusive trauma; is that correct?
A. Yes. And I am talking about young children. It would be a whole other story if we were talking about senior citizens or another group.
Q. All right. Are there any research articles related to this that you relied upon, or that you're familiar with, about the cause of most chronic subdural hygromas?
A. Yes, sir.
Q. All right. And are those articles we've already talked about? If so, which exhibit? And if not, which ones?
A. Yes. That would be included in the Hellbusch article. It would be included in the Cho and the Park -- I'm sorry, I didn't say Park -- in the Cho and the Lee, not K.S., articles. And it would be within the K.S. Lee articles, as well.
Q. And those are all articles that have already been admitted?

A. Yes, sir.
Q. Then your opinion goes on to talk about: "Subdural hygromas of infancy are usually benign, but they can occasionally cause small brain surface hemorrhages. These occur for two reasons. Small vessels that course from the inner skull to the brain surface are stretched by the fluid accumulation and can tear and leak blood. The body attempts to wall off the fluid collection and builds a membrane. This membrane is vascular and can leak blood. A small surface hemorrhage is apparent on C's head CT and MR scans."
I believe you testified about all of this at your earlier portion of the testimony, but just to be clear, with respect to this part of your opinion, how did you arrive at that conclusion?
A. Again, experience, but also in the articles by Park, by both Lees, and in the articles by somebody that I haven't quoted before, and this is a hard name to pronounce, Wittschieber. And I'm going to tell you which one that is. It's 29, I believe, or at least I had it as 29.
Dr. Wittschieber describes that mechanism, and then finally, there is --
Q. Hang on one second. With respect to Dr. Wittschieber, that was identified as Article No. 29 on the list. I don't believe we have admitted that as an exhibit yet; right?
Dr. Scheller, it's not in your --

A. We have not.
Q. It's still in your book?
A. Yes, sir.
Q. Okay. So let's call that Defense Exhibit 37, the Wittschieber article.
MR. MARSHALL: Which number was that?
MR. KOCHERSBERGER: It was No. 29 in the list of foundational materials.
BY MR. KOCHERSBERGER:
Q. And did you say there was another?
A. I thought there was, but I might be wrong. One moment. I'll quote the Park article, which is from 2008, and that is Section No. 24 in the notebook.
Q. So the Park article, which was identified in the Notice as No. 24, will be marked as Defense Exhibit 38.
MR. MARSHALL: Your Honor, I have a question for defense counsel. I don't understand how this Wittschieber article is different than the Government's Exhibit 26, also being a Wittschieber article.
THE COURT: Is it the same article?
MR. MARSHALL: It appears to be the same article. The typeface -- it could be a copy. They seem similar. Some of the formatting looks a little bit different, but overall, they look -- they're both from the American Journal of Neuroradiology.

MR. KOCHERSBERGER: They're likely the same article, Your Honor, and we just have a more inclusive list here. I just don't have the -- I think I do. Hang on.

I am mistaken, I don't. So I'm going to keep it marked as Defense Exhibit 37. Is that what I said? You have it right there in front of you.

THE WITNESS: 37.

MR. KOCHERSBERGER: And apparently that's identical to Government's Exhibit 26.

THE COURT: Well, let's do this. I'll note for the record that it appears that Government's Exhibit 26 and Defendant's Exhibit 37 appear to be the same article written by the same doctor. Is it Wittschieber?

MR. KOCHERSBERGER: Wittschieber. W-i-t-t-s-c-h-i-e-b-e-r, I believe.

BY MR. KOCHERSBERGER:

Q. All right. And then you mentioned the Park article, which was at Tab 24; is that correct?

A. Yes.

Q. We'll mark that as Defense Exhibit 38.

All right, with respect to those three articles, what is the importance of those with respect to your opinion on the mechanism of subdural hygroma that we just discussed from your opinion?

A. They all describe this two-pronged mechanism in which

subdural hygromas can cause some minor hemorrhage and trigger seizures.

THE COURT: What's he rebutting?

MR. KOCHERSBERGER: I'm sorry?

THE COURT: What's it rebutting regarding Dr. Strickler's testimony?

MR. KOCHERSBERGER: I believe that followed from Page 99, Line 20, on through.

THE COURT: All right.

MR. MARSHALL: And Your Honor, I would disagree with that assessment. I think these are all -- all these documents are trauma-related documents. Dr. Scheller's claiming that these are all benign conditions, but the articles, themselves, are talking about the hygroma formation post trauma. They don't support what the doctor is saying, and so I think it does not go to the foundation.

These are supposed to be a foundational support, and it just doesn't exist. And he hasn't done anything to say it supports it other than make a bold two-sentence claim that it supports his claim for seizures, but he hasn't pointed to anywhere in the documents about how it would do so.

MR. KOCHERSBERGER: He was talking about the mechanism of causing small surface bleeds, not seizures yet. We haven't gotten to that, I don't think.

THE WITNESS: I did mention seizures, but I can wait.

MR. KOCHERSBERGER: Nonetheless, that sounds like good fodder for Mr. Marshall on cross-examination to ask Dr. Scheller how it is that -- or I could just do it.

MR. MARSHALL: Your Honor, the objection is just that it's foundational to his opinion. If he's just giving us articles that aren't truly foundational, if they don't actually support his opinion, if he just makes that claim, we're here in rebuttal and we don't have a chance to have another doctor come in and --

THE COURT: I know, and that's why at this point, it's not clear to me what the basis for rebuttal is. You asked him about his opinions in Exhibit 3, but you didn't link it up with what Dr. Strickler testified to. So at this point, I'm going to sustain the objection unless you can lay a foundation as to how the exhibits -- I mean, I'll note that we've already -- it appears that the one exhibit has already been admitted as a Government's exhibit, but it's not clear to me what, in terms of Dr. Strickler's opinion, it's rebutting. So go back and link that up for me.

MR. KOCHERSBERGER: So in Dr. Strickler's testimony, and I believe it starts at Page 99, Line 20, and going forward through the next several pages, her opinion was that these subdural hygromas do not cause those bleeds in the way that Dr. Scheller had suggested. Rather, that those bleeds are caused by the trauma, itself. And that's what he is making the

distinction about.

THE COURT: All right. Let me get to Page 99.

MR. KOCHERSBERGER: Let me get the transcript as well, Your Honor. And I'm sorry, Your Honor, that was for the previous section that we were talking about. This particular section is contained starting at Page 25. Actually, before that, where Dr. Strickler is talking about there being no other cause of these injuries other than traumatic, and she discusses that throughout that section. I can read some of it, if you prefer.

THE COURT: Yes, that would help.

MR. KOCHERSBERGER: So she says --

THE COURT: Again, are you at Page 25?

MR. KOCHERSBERGER: This is -- I apologize, no. Hang on. The page numbers don't show up here at the same time. Page 11 is what I'm reading from here.

THE COURT: All right.

MR. KOCHERSBERGER: Dr. Strickler says: "Ideally, I would love to find another cause" for the finding. And so she examines those other causes, and then she ultimately concludes that there was not another cause.

Then she says at Page 24, Line 24, through Page 25, Line 2, she talks about whether she was able to locate any of the nontraumatic issues. She's talking about metabolic issues at this particular point. And then she rules out any medical

conditions that could cause the findings. That is located at Page 28, I believe.

On 28, she's talking about the medical history, and she says she tries to examine whether or not there is some medical condition that may cause the findings. And then I know she ultimately concludes that there was no other finding, I just have to find that part for Your Honor.

THE COURT: Would it be on Page 31, Line 12? Or maybe the top of Page 31.

MR. KOCHERSBERGER: Right. I mean, she discusses this throughout this section, all of the various other things that it could be other than trauma, and she rules out anything.

THE COURT: Right. And then she says: "My diagnosis" -- I'm at Line 12, Page 31. "My diagnosis was that "C" experienced physical abuse, which included his skin injuries and also abusive head trauma." So that's her. So what is he rebutting at this point with these articles?

MR. KOCHERSBERGER: Right. Dr. Scheller is saying that a preexisting hygroma can cause a hematoma by a couple of different mechanisms which are reflected in his opinion, and also in these articles.

BY MR. KOCHERSBERGER:

Q. Is that accurate, Dr. Scheller?

A. Yes, sir.

MR. KOCHERSBERGER: So it's rebutting Dr. Strickler's

testimony that there was no other possible cause, because she said it didn't work that way, essentially.

THE COURT: Okay. Now, Mr. Marshall, the objection.

MR. MARSHALL: These articles, I don't believe, support what he's saying. He makes the claim that this article supports what he's finding, but there's been no identification of where in this article it supports his claim. And if you look at some of these titles, most of them appear to deal with adults, and some of these are adults in old age. And as Dr. Scheller has previously testified, that is not the population we are to be considering, because in old age you have brain degeneration that takes place and that can cause some of these hygromas and other things.

So these articles aren't supporting the claim he's making when we should be talking about someone that is a child, at least under the age of five, under the age of three. These don't support the claim that he is making.

THE COURT: And we're talking about exhibits -- what are the numbers, again?

MR. MARSHALL: The Park article was, I believe -- I've lost my numbering, Your Honor. I'm sorry.

THE WITNESS: They're in order.

MR. MARSHALL: Park, I believe, talked about it, and the Wittschieber -- no, not that one. Some of the Lee articles are dealing with the elderly, as well, and not minors.

MR. KOCHERSBERGER: I believe, and I'm going to hand these back to Dr. Scheller to be sure, but I believe we're talking right now about Defense Exhibits 37 and 38, which are the Wittschieber article and the Park article.

THE COURT: Well, I won't definitively -- I'm having trouble seeing this. If the articles, as Mr. Marshall indicated, are talking about population groups other than children, I'm not sure they would be relevant. So I'll reserve on that.

MR. KOCHERSBERGER: And I can ask, just to save the time, which I know seems like a disingenuous thing to say after I'm taking up so much of your time.

BY MR. KOCHERSBERGER:

Q. Dr. Scheller, can you describe what those two articles are about and how they actually have something to do with what we're talking about here in regards to the mechanism for causing small brain surface hemorrhages?

A. Sure. The Wittschieber article obviously just deals with infants, because that's the whole topic of the article, and that article does point out these two mechanisms for chronic subdural hygromas to trigger small amounts of acute hemorrhage.

And number two, the Park article, which is the only article that discusses adults only that I provided, that article talks about the same idea. In other words, when the brain is removed from the inside of the skull, there's a space

there, and two things are going on. Small blood vessels crossing that space are stretched, number one, and number two, membranes are being made to block off an accumulation of more space. Those two things can leak blood.

So the Park article says the exact same idea as it applies to adults and older people. The Wittschieber article is, of course, just about infants.

MR. MARSHALL: Your Honor, I would beg to disagree with Dr. Scheller. The Wittschieber article explicitly states: "The term chronic hygromas should be principally avoided as it is a very imprecise and pathogenetically insufficient description." It is not a term that he uses in the article. He never refers to the term chronic subdural hygroma. That is the defense argument, and he says it's not a term you should ever use.

That is not something that it's talking about, like the way that a hygroma would develop and cause potentially a subdural hematoma. He never refers to the term in the article because it's an imprecise term that shouldn't be used, and that's the term that Dr. Scheller is using. It doesn't go to support him in any way.

MR. KOCHERSBERGER: I think we're talking about two different things here. We're talking about the mechanism by which the small brain surface bleedings can occur. That's one part of Dr. Scheller's opinion. We discussed his opinion with

respect to the term hygroma and how he's using it, and he identified the articles that were relevant to that. The fact that this particular doctor doesn't like that term, who wrote the article, doesn't take away from the fact that he describes the mechanism using other terms.

BY MR. KOCHERSBERGER:

Q. I guess, why don't you pinpoint in the article -- can you pinpoint in the Wittschieber article --

THE COURT: Let me ask you this: The Wittschieber article, is that the same article that's -- is this a different Wittschieber article, or is this the same one that's Government's Exhibit 26?

MR. KOCHERSBERGER: It should be the same one, Your Honor.

THE COURT: In other words, it's already admitted. Now, he may not have a valid basis for relying on it, but in other words, if the Government has already admitted that exhibit, then why are we -- what you're saying is, he shouldn't be relying on it, but the exhibit has already been admitted; right?

MR. MARSHALL: That is correct, it has already been admitted. But it doesn't go to the foundation for his argument.

THE COURT: Right. So at this point, the article is already in, so then it's an issue about whether or not his

reliance on the article is justified, as I see it.

(Defense Exhibit No. 37 admitted.)

THE COURT: And the Park article, I don't see the relevance. So I'll sustain the objection as to Exhibit 38. Let's keep moving.

MR. KOCHERSBERGER: The Park article, Your Honor?

THE COURT: Yes. You said it's for seniors, it's for adults. It pertains to adult brains.

MR. MARSHALL: Yes, Your Honor. I may have said seniors, but the age range that it actually lists is 37 to 83. Clearly adults to senior citizens.

THE COURT: Right. So on that basis, I'm sustaining the objection.

MR. KOCHERSBERGER: Okay, I understand, Your Honor. What I would expect would happen is in the closing arguments, we can make these arguments about whether these articles actually support these things and to what extent, and we can point you to language in a way that's much more efficient.

THE COURT: Well, it's of record, and I suppose if I, in reviewing the closing arguments, if I feel like I made an error, then I'll just note that I'm changing as to that article.

MR. KOCHERSBERGER: Okay.

BY MR. KOCHERSBERGER:

Q. All right. Now let's talk about what your opinion

proceeds into. "When the brain surface is irritated with blood, it can trigger a seizure." And I don't think there was really much in the way of dispute about whether that's true. But following that, you say: "This is why "C" had an episode of altered mental status and irregular breathing on the morning of 9/28."

So first, what is why he had that episode of altered mental status and irregular breathing?

A. He had a seizure at that time.

Q. And I believe the Court actually, at Page 120, Line 18, and continuing onto Page 121, Page 4, expressed concern about whether you can make that diagnosis based on the record here. So, what methodology did you use to determine that it was a seizure that caused the altered mental status and irregular breathing on the morning of 9/28?

A. The specialty of neurology is the one that is called around the world, and particularly in the U.S., when anybody is having a seizure, whether they be an infant or old person or anybody in between. One of the major topics that all neurologists are tested on when we take our board exam is the diagnosis and treatment of seizures, and so that's something that's key in a neurologist's training and experience. Certainly I've diagnosed and treated thousands of infants, children and teenagers who have had seizures in my 30 years of practice.

So the best explanation for an infant who has an altered mental status and alterations in the automatic control of what we do usually without thinking, like breathing, the best explanation is a seizure, absent any other seizure triggers. He didn't ingest any medicine he shouldn't have, he didn't have any signs of a brain infection, so on and so forth. So clearly to a neurologist what "C" experienced that day was a seizure.

THE COURT: Are you going off of something that I said, or are you going off of something that Dr. Strickler said?

MR. KOCHERSBERGER: It was something that you asked Dr. Strickler about and she commented on as a result of your question at those two lines I suggested. Dr. Strickler said that it was outrageous for Dr. Scheller to be rendering such an opinion having essentially not seen the child, I guess, is what her concern was.

THE COURT: In other words, Dr. Strickler, and again, I haven't -- I'm trying to find it here on this transcript.

MR. KOCHERSBERGER: I hope I wrote it down correctly. 120, Line 18, and 121, Line 4.

THE COURT: Right, that's what I said. But was I asking the witness a question?

MR. KOCHERSBERGER: You were, I believe. I believe her response is there, as well.

THE COURT: All right. "So in order to ascribe a

seizure to blood being on the surface of the brain, you first have to figure out why is the blood there in the first place, and how could that factor into the child having a seizure."

MR. KOCHERSBERGER: And --

THE COURT: Okay, these are questions that I think I asked, and this was Dr. Strickler's testimony. So, what's he rebutting?

MR. KOCHERSBERGER: I think they were questions you asked to Dr. Strickler while she was on the stand.

THE COURT: Right. I was just trying to figure out what's -- just because I asked the question, that doesn't mean it's proper for rebuttal. It would be the answer that Dr. Strickler gave to my question; right? That's what we're talking about.

MR. KOCHERSBERGER: That's correct, Your Honor.

THE COURT: Okay.

MR. KOCHERSBERGER: And you said: "This is why "C" had an episode of altered mental status and irregular breathing on the morning of 9/28. Do you agree with that statement?" Dr. Strickler said she did not, and then you asked her why and she gave a long reason as to why.

THE COURT: Right.

BY MR. KOCHERSBERGER:

Q. So given that, Dr. Scheller, is it your understanding with respect to the specific -- let me back up.

Are you saying the specific cause of the seizure that "C" had was the blood that was on the brain's surface?
A. Yes, sir.
Q. And how did you reach that conclusion?
A. Knowing what the causes of seizures are, and knowing that seizures do represent the brain being irritated by something. There are a lot of potential irritants. Drug irritants, chemical imbalance irritants, infection irritants, and so on and so forth. And the only thing, based on my review of the medical file, history, physical, labs and radiology, was that "C's" brain was being irritated by something. And you could see that the blood was sitting there, irritating it.
Q. Let me ask you this, and maybe it's me who's making this into something that it's not. Is it your understanding that you disagree with Dr. Strickler and/or Dr. Hart that the blood on the surface caused the seizure, or you just disagree as to how the blood got there?
A. I don't specifically remember their testimony. I can't say. I can just say my impression.
Q. Was there anything else that you observed in the medical records, including the imaging of "C," that would have identified the cause of the seizure that he had on the 28th?
A. Well, the reason you do the imaging is to look for other causes, tumor, infection, stroke, brain compromise, and none of that was found on the MRI scan.

Q. Got it. Okay, now let's talk a little bit about retinal hemorrhages, which is the next part of your opinion that was at issue. You said: "Retinal hemorrhages typically are not an indication of eye trauma and are certainly not specific to abusive head trauma." I believe at Page 24, Line 3, Dr. Strickler disagreed with that to an extent.

But first, please just describe what it is that you're saying here.

A. So, I gave you a demonstrative, and I'm happy to use it. But if the Court doesn't want me to use it, I won't use it.

Q. I think you could probably just explain it at this point. I don't know that the Judge wants a lot more exhibits. But let's see how the explanation goes.

A. I always explain things better with pictures, but I'll do my best.

If we can imagine the eye as a ball, and if we slice the eye in half, we'll see all the little blood vessels, that line, the inside of the ball. Half of those blood vessels are arteries, and those blood vessels are bringing blood to the eye, and then half of them are veins and they're going to drain that blood and bring it back to the heart.

So what a retinal hemorrhage represents is one or many little drips of blood that come out of an eye vein. Eye veins are very fragile, just like all veins are fragile. But these are tiny little veins, so they're more fragile than most, and

it doesn't take a lot to make them bleed. And the number one cause in the world of retinal hemorrhages has nothing at all to do with eye trauma or any kind of shaking or violence, or anything like that.

Q. I stopped at a portion of your opinion, and you seem to have gone on. All I'm asking you about is that first sentence, that "retinal hemorrhages typically are not an indication of eye trauma." That part of it, what is it that you're saying here?

A. I'm saying that the eye is often a bystander to what's going on in and around the brain, and so the most typical scenario for retinal hemorrhages is when something is happening in or around the brain indirectly affecting the eye.

An analogy would be if I go to a bar and two people near me are having a fight, I might be indirectly struck or thrown or something, but I'm not a part of the fight. So the eye is not part of the trauma yet. Because the circulation is so intimately connected, the eye will develop findings related to what's going in the brain.

THE COURT: What's being rebutted here?

MR. KOCHERSBERGER: That was the indication at Page 24, Line 3.

THE COURT: I see, where Dr. Strickler is talking about retinal hemorrhages?

MR. KOCHERSBERGER: Right. And Dr. Scheller is

saying that it's caused by the circulation issues, and we're going to get to that opinion in a moment, not by actual physical trauma to the eyeball, itself, which is where there seems to be a disagreement.

BY MR. KOCHERSBERGER:

Q. And so, how is it that the retinal hemorrhages actually form if it's not trauma to the eye?

A. If we can imagine a river, and the river is flowing, and then there are these little tributaries flowing into the river, if there's a blockage anywhere in that river, the tributaries flowing into the river will back up, and sometimes they'll overflow. Well, that's what a retinal hemorrhage is, is a backup of the flow of blood in these very small veins. The overflowing is this leakage of blood.

So, on the vein's trip from the eyeball to the heart, there is a stop in the brain. If there's something going on in the brain that will affect circulation, that will back up the retinal veins and cause them to leak, sometimes a little, sometimes a lot.

Q. Did you have any medical literature to describe this mechanism of causing the retinal hemorrhages?

A. Yes, I did, and I put them in the notebook. The most potent one is 25.

Q. All right. Tell us about the article that is identified on the Notice as 25, and I'm about to mark as Defense

Exhibit 39. What exactly does that tell us about this mechanism that you were just describing?

A. Doctors in California examined -- let me take it out before I forget.

A group of doctors in California examined the eyes of perfectly normal newborns and discovered that 20 percent of them, one out of five, had retinal hemorrhages, and not only did they have retinal hemorrhages, those hemorrhages involved multiple layers within the retina and also were found throughout the eyeball. In other words, in the periphery or in the middle of the eye.

So that tells me that -- clearly nobody has traumatized these children. They're born normally. But we do know that there are very dramatic changes in circulation and pressure within the skull as a baby's born, so that's the most logical explanation as to what causes retinal hemorrhages. The number one cause, being born.

Q. Are you suggesting that "C" had retinal hemorrhages that were there from the time that he was born?

A. No, sir, not at all. They almost always go away within a few weeks.

Q. So what does this have to do with "C's" situation?

A. It helps us understand the mechanism. We know that "C" did have a pressure build-up, because he had fluid that didn't belong there. We know that "C" did have a problem with

circulation, because he developed a small acute hemorrhage. Those two factors can combine to effect the brain circulation and then have that secondary effect on the veins in the eye.

MR. KOCHERSBERGER: Move to admit Defense Exhibit 39.

MR. MARSHALL: Your Honor, I'm objecting. It's a birth trauma related injury, or it's trauma from birth. It has nothing to do -- in this case, he said that he wouldn't expect this to have been the cause of the retinal hemorrhages in "C." He's trying to do some sort of either -- like a transitional property for how he gets to the injuries in "C." But the document that he's offering doesn't support his claim. He even admits it doesn't support his claim, because it should have resolved within a few weeks. "C" was eight months old, he wasn't an infant, there's no support here.

MR. KOCHERSBERGER: And Dr. Scheller is suggesting that the way a retinal hemorrhage is formed in a newborn is as a result of squeezing through the birth canal, causing increased pressure in the veins of the brain circulation, which then causes retinal hemorrhages in much the same way that the increased pressure in "C's" head that was documented from a different cause, but the same circumstance, increased intracranial pressure, caused his retinal hemorrhages.

As he described in his opinion, it's the circulation dynamics and the increased pressure that causes retinal hemorrhage. The retinal hemorrhage is not a direct result of

trauma, itself. So I think it's just describing the mechanism the same way, and in a pretty commonly observed way.

THE COURT: Anything else, Mr. Marshall?

MR. MARSHALL: I don't understand the -- well, and maybe it's better for cross. But it doesn't seem to -- to make an accurate comparison, you would have to then say that "C" had gone through something traumatic, which justifies the prosecution's perspective, because what the article is saying is that the birth trauma is part of the reason for the retinal hemorrhaging.

And what Dr. Scheller is saying is that there's some other kind of condition that he might have had. The linkage from that condition to this article seems remote, unless he's saying that there's someone who put "C's" head in a vice and squeezed his head like he was trying to come out of his mother's vagina again, to cause those same kinds of injuries. The comparison is not an apt comparison.

THE COURT: Yes, I'm failing to see how it's an apt comparison, so I'm ruling in favor of the Government on that. The objection to Exhibit 39 is sustained.

BY MR. KOCHERSBERGER:

Q. Is the situation of a newborn having increased intracranial pressure different than the situation of a child "C's" age having increased intracranial pressure?

A. No. The mechanism is the same. One is caused by a birth

canal squeezing the skull, and one is caused by something inside the skull that doesn't belong there. And in this case, it was fluid and a little bit of blood.

Q. What methodology did you use to reach the conclusion that it was this increased pressure that caused the retinal hemorrhages?

A. All neurologists know that problems of brain circulation can cause retinal hemorrhages in any age. And, again, when there's a problem with brain circulation -- and let's just give an example. An aneurysm. An aneurysm is when a blood vessel bursts and starts to squirt blood inside the brain. Clearly the brain circulation is very, very dramatically affected. All neurologists, including myself, are taught that brain aneurysms are a very well-known cause of retinal hemorrhage. Nothing happens to the eye when somebody has a brain aneurysm, what does happen to the eye is that its circulation is indirectly affected by the circulation of the brain.

So that same idea, that anything that can affect the brain circulation can affect the eye, that could be true for a newborn, that could be true for an old person with an aneurysm, and it could be true with a child who has too much pressure from too much fluid.

Q. Is this at all a controversial thing within neurology?

A. When you say this, what's "this"?

Q. The fact that increased pressure causes retinal

hemorrhages.
A. No, sir.
Q. All right. And then in your opinion, you say: "To summarize, "C" had a chronic intracranial fluid circulation condition of infancy that is usually benign. In his case, it caused a small amount of bleeding and a seizure."
Dr. Strickler testified at some length about your use of the term chronic intracranial fluid circulation condition. That's at Page 40, Line 25 of her testimony. What are you describing here?
A. Chronic subdural hygroma, which is a very well-known medical term. It's in just about all of these articles. And then the complications that arise from that which, again, are in the medical literature that I provided.
Q. So a chronic intracranial fluid circulation condition of infancy, is that a diagnosis or a description, or what is that?
A. That's -- it was an attempt to have lay people understand what I had previously described in my letter medically.
Q. Which was what?
A. Chronic subdural hygroma of infancy.
Q. All right. Finally, you say: "There's no evidence that "C" was a victim of abusive head trauma." What do you mean by that?
A. No conclusive evidence. I had listed a bunch of findings that might happen to a child who's been a victim of abusive

head trauma, and "C" didn't have any of those findings. And I can list them again. They're in the letter.

Q. Just tell us what you're referring to.

A. Broken ribs, broken limbs, neck injuries, unexplained external injuries, scalp swelling, skull fracture, and brain injury.

Q. Are you familiar with the diagnosis of abusive head trauma?

A. Sure. Every pediatrician is trained in it. I am a board certified pediatrician, and certainly I do my best to keep up with the literature.

Q. And did you consider that as a possible diagnosis for "C"?

A. Well, it's a rule-out diagnosis. So if there is no medical diagnosis, then you would consider it. So I didn't get to that point, because I discovered that "C" did have a medical diagnosis.

Q. And that medical diagnosis was what?

A. Complications from a chronic condition that triggered his seizure.

Q. I think you described it, but was there any different methodology that you used to reach that conclusion that you haven't already described?

A. No, sir.

MR. KOCHERSBERGER: May I have just a moment, Your Honor? I think I'm done.

THE COURT: Sure.

BY MR. KOCHERSBERGER:

Q. Before we finish here, Dr. Scheller, we talked a little bit about the retinal hemorrhage in newborns. I think I forgot to ask you, were there other articles that you considered that bore on that same subject of the cause of a retinal hemorrhage?

A. Sure. Recently a Swedish panel of scientists tried to evaluate the medical literature that assessed the importance or relevance of retinal hemorrhages to the diagnosis of abusive head trauma, and found that there was no science behind it at this point. It was all anecdotal.

Q. Is that any of the things that we have in the materials?

A. Yes, sir. There's two, actually, references to it. No. 17, and then a corresponding one is No. 4. No. 4 is really a response to those who criticized No. 17.

Q. So what is the importance of No. 17 with respect to retinal hemorrhage?

A. The idea that all the medical literature, of which there's a lot that documents retinal hemorrhage as a portion or as a criteria for diagnosing child abuse, is all tainted with circular reasoning. In other words, we suspect the child is abused, we know that retinal hemorrhage is a sign of abuse, let's find the retinal hemorrhage and then that proves that retinal hemorrhage is a sign of abuse.

Q. And I apologize, I didn't ask my question very well. I

was talking about other articles that describe the pressure-caused retinal hemorrhages as the mechanism for a retinal hemorrhage that are contained in the materials that you provided, other than the one that the Judge ruled was inadmissible because it involved newborns.

A. Sure. One of them is No. 27.

Q. All right. Tell us about that one.

A. So, that looked at infants who are victims of abusive head trauma and who weren't, and looked for retinal hemorrhages in both, found retinal hemorrhages in both groups, and there seemed to be, they couldn't conclude for sure, but there seemed to be a connection between increased intracranial pressure and retinal hemorrhage in both groups.

Q. That was the document that was identified in the Notice as No. 27, and I'm going to mark it here as Defendant's Exhibit 40. And that relates to the mechanism causing retinal hemorrhages; is that what you said?

A. Yes, the increased intracranial pressure that I suggested.

Q. Were there any other articles?

A. There's an article that I've written. It was published I think around 2017 or 2018, and it's not in this binder. It's about infants who are found to have retinal hemorrhage like "C" who didn't have any brain injury.

Q. How about any others in the materials, is there any? Take a look at No. 26, just to be sure.

A. I don't want to get into that one.

Q. Okay.

MR. KOCHERSBERGER: All right. So I would ask to admit Defense Exhibit 40. Again, it describes the pressure-caused retinal hemorrhage mechanism that Dr. Scheller has described both with respect to birth, with respect to the patient in this case, and now with respect to a whole bunch of others that were studied.

MR. MARSHALL: No objection.

THE COURT: It will be admitted for purposes of this hearing.

(Defense Exhibit No. 40 admitted.)

MR. KOCHERSBERGER: I have no additional questions, Your Honor. Thank you.

THE COURT: All right. Let's take a -- how much of a break do you need? Can we be back at 1:45, or is that pushing it?

MR. MARSHALL: That's fine, Your Honor. I was going to say 15 minutes. But if the Court would prefer an extended break, that's fine as well. I wasn't sure how much time the Court had available.

THE COURT: Well, I had them, this morning, vacate the stuff later on this afternoon. In other words, we've got to get this finished.

MR. MARSHALL: Yes, sir.

THE COURT: So does that work for you, coming back at 1:45?

MR. KOCHERSBERGER: Whatever you like, Your Honor. We had planned to be with you all day.

THE COURT: In other words, if you're going to try to grab a quick bite to eat, maybe we ought to do 2:00, then. Does that work?

MR. KOCHERSBERGER: Sure, that would be fine. Thank you.

THE COURT: All right. We'll be in recess until 2:00.

(Recess was held at 12:55 P.M.)

(In Open Court at 2:06 P.M.)

THE COURT: You may be seated, Dr. Scheller. Counsel may cross-examine.

MR. MARSHALL: Thank you, Your Honor.

CROSS REBUTTAL EXAMINATION

BY MR. MARSHALL:

Q. On direct examination in rebuttal, you talked about your methodology when you treat a patient.

A. Diagnose and treat, yes, sir.

Q. And that there were four different things that you look at. Is that the same methodology that you use when you're forensically consulting?

A. Yes, sir.

Q. All right. In this case, you wrote a report?
A. Yes, sir.
Q. And that's Document 3 in the Government's exhibit list?
A. Yes, sir.
Q. You stated that there were four parts to your methodology. Can you point in your report to where you talk about the physical exam of the patient?
A. Sure. It's the second line. Shall I read it, or not?
Q. Second line of what page, sir?
A. Right at the top.
Q. Okay.
A. Should I read it?
Q. Sure.
A. "I reviewed medical records in this case including records of birth, pediatric visits, ER visits, hospitalization, and follow-up." Every single one of those contained physical exam findings.
Q. All right. And where do you use -- in your findings, where do you make mention of any of the physical findings that "C" actually had?
A. On the top of Page 2 in my version -- well, I'm sorry. Let's start with the bottom of Page 1. "Altered mental status and irregular breathing," that's a physical finding. And then on the top of Page 2, "Right upper arm bruise." That's another physical finding. And then just underneath there, "A head

circumference of 46 centimeters." That's a physical finding.
Q. What about medical history? How did medical history -- you talk about medical history as one of the things that you use in the formation of your diagnosis; is that correct?
A. Yes, sir.
Q. But you never took a medical history in this case?
A. No, sir, I did not.
Q. You stated you never read any of the police reports that talked about the Defendant, about what happened in the case?
A. I don't specifically recall.
Q. Do you recall telling the attorney that you don't consider the actions of the Defendant in making your diagnosis?
A. Yeah, if I said that in my previous testimony, I may have. I don't recall saying that.
Q. You never spoke to the Defendant prior to the Daubert hearing, the first Daubert hearing?
A. That's correct.
Q. You never spoke to any of the treating physicians in this case?
A. That's right.
Q. You never spoke to the consulting physicians in this case?
A. That's right.
Q. You have a Certificate of Neuroimaging, but you never spoke to Dr. Hart or any of the other radiologists in this case?

A. That's right.
Q. Now, I want to start kind of with more of a general question. You constantly refer to this as a chronic subdural hygroma.
A. Yes, sir.
Q. What caused it? You never mentioned what was the cause of his chronic subdural hygroma.
A. I'm not sure. I can only hypothesize.
Q. What is your hypothesis?
A. The most common cause is birth, and what happens at birth to a number of children, not everybody, is that the brain, due to the squeezing of the birth canal, the brain moves away a little bit from the inside of the skull and creates a space. And that space could just disappear, or that space could accumulate fluid and turn into a chronic subdural hygroma. That's the number one cause in infants.
Q. And you've diagnosed "C" as having this condition. So you're saying now that you think he obtained it from birth?
A. Possibly.
Q. What would have been another cause?
A. A minor trauma in the first few months of life that perhaps would have gone unrecognized because maybe he cried for a minute and stop crying, but it was enough to, again, to move the brain just a little bit away from the inside of the skull and cause fluid to accumulate there.

Q. You've never referred to that statement before, have you?
A. I don't understand the question.
Q. You've never -- you stated before that chronic subdural hygromas are not the result of trauma.
A. I mean, significant trauma. But I have said that. I have said those exact words. But what I mean is a significant trauma, a trauma that people would recognize. Falling down the stairs.
Q. Dr. Scheller, do you agree that it's important to be precise when we're talking about a diagnosis?
A. For sure.
Q. And when we're talking about a brain injury?
A. For sure.
Q. Now you're saying that it could be the cause of trauma when you previously said it was not the cause of trauma. Do you understand how that could be contradictory and confusing?
A. I never said anything was the cause of trauma. It may have been caused by trauma. I'm trying to be precise, so if we can be precise with the questions, I'd appreciate it.
Q. So is your supposition in this case that it's birth trauma? Is that what you believe happened?
A. It may be. I'm not sure.
Q. And you were here for the first Daubert hearing in November when Dr. Hart testified, were you not?
A. Yes, sir.

Q. Do you recall as part of his testimony the discussion of the Rooks article?
A. Sure.
Q. Have you read the Rooks article?
A. I'm very familiar with it, yes, sir. In 2007, I believe, it was published.
Q. What was one of the important findings in the Rooks article, if you're so familiar with it?
A. It really only had one important finding, and that was that 45 percent of perfectly normal children did have MRI evidence in the first few days of life of acute subdural hematoma, although they were mostly very small.
Q. And what happened to those subdural hemorrhages?
A. We don't know, because only a small percentage of the children were followed over time.
Q. So you disagree with their conclusion that a subdural hemorrhage after one month of age is unlikely to be birth related?
A. That's actually not their conclusion, if one reads a little bit further into the article. That's a misrepresentation.
Q. All right. Can you read me the last line of the conclusion statement?
A. Sure.
Q. And if you need to, confirm it with the Rooks article.

A. "Subdural hematoma after one month of age is unlikely to be birth related."
Q. Okay. So you're saying that's not their conclusion?
A. Well, they wrote it.
Q. Did you just not tell me to read further?
A. I did.
Q. But that's the last line of the article. So it's impossible to read further; correct, Dr. Scheller?
A. Except for the Acknowledgments, you're right.
Q. So you can't read any further. Their conclusion is what?
A. Well, I'll read it again. "Subdural hematoma after one month of age is unlikely to be birth related."
Q. And you're saying that's not what their finding was?
A. That is not an appropriate conclusion from what they studied.
Q. And you've done how many studies?
A. I'm sorry?
Q. How many studies have you done?
A. A number of them. I've worked on a lot of projects and I've written some articles.
Q. How many studies related to birth trauma?
A. I have one that I can think of offhand.
Q. And you didn't cite it for your conclusions today, though, did you?
A. I did not.

Q. The Rooks article also says that all subdural hematomas have resolved at the age of three months.
A. No, it did not say that.
Q. Let me continue on.
THE COURT: I'm sorry, who is the author of the article you've got right now?
MR. MARSHALL: It's the Rooks article.
THE COURT: Is it R-o-o-k-s?
MR. MARSHALL: R-o-o-k-s. Actually, the title of the article, which I did not mention, is, "Prevalence and Evolution of Intracranial Hemorrhage in Asymptomatic Term Infants."
THE COURT: Thank you.
BY MR. MARSHALL:
Q. Now, as part of this article and this study -- and there was over 100 different patients; is that correct?
A. They did MRIs on 100 infants, neonates.
Q. And as you mentioned, it was approximately 46 that had findings?
A. Forty-six out of 100 had an acute subdural hematoma immediately after birth.
Q. And one of the things it notes is that all of them were asymptomatic; correct?
A. Yes.
Q. "C" was symptomatic?
A. Yes, sir.

Q. "C" was also eight months old?
A. Yes, sir.
Q. He had an altered mental state, his eyes were glazed, his eyes were deviated to the side and not focused, he had a seizure, he had breathing problems, he was vomiting, and he was limp?
A. That's a correct description of his findings on the day in question.
Q. Well, it was beyond the day in question; correct?
A. His symptoms did continue, yes, sir.
Q. They lasted several days, because he was hospitalized for several days due to the ongoing altered mental state and condition?
A. Yes, sir.
Q. Now, you were talking at one point about the different types of brain injuries, and that you would expect them to show up on the MRI; is that correct?
A. Yes, sir.
Q. Does a concussion show up on an MRI?
A. No, sir.
Q. Is a concussion considered a brain injury?
A. Possibly.
Q. You're the neurologist. Is a concussion considered a brain injury?
A. And I'm saying possibly.

Q. What else would it be if it's not a brain injury?
A. A brain irritation. A brain malfunction.
Q. Okay. Now, it was part of your testimony today that "C" did not have any brain injury?
A. That's right.
Q. It's a part of your testimony today that there was no brain injury on any of his scans?
A. That's right.
Q. That even in the, and I may misuse the term, but like even in the scan that had the diffusion of the MRI, you're saying that there was no sign of injury?
A. That's right. That's how the radiologist interpreted it, and that's how I interpreted it.
Q. Okay. Now, an acute subdural hematoma would be considered a brain injury?
A. No, sir.
Q. What would an acute subdural hematoma be considered? Is that a normal finding?
A. Absolutely not.
Q. If it's not a brain injury, what do you consider it?
A. It's a collection of blood in between the brain and the inside of the skull. There is sometimes an accompanying brain injury, but not always.
Q. What causes subdural hematomas?
A. The number one cause in the whole world is an impact

injury to the outside of the skull.
Q. All right. And what about a subarachnoid injury?
A. We don't use that term subarachnoid injury. We might say subarachnoid hemorrhage. I don't use the term subarachnoid injury.
Q. Okay, subarachnoid hemorrhage.
A. What's the question?
Q. Would that be considered a brain injury?
A. No, but that's much more likely to produce one than a subdural hematoma.
Q. So when you're saying that there were no signs of brain injury on the scans, you would disagree with the findings of Dr. Hart when he listed the different brain injuries?
A. I don't believe Dr. Hart found any brain injuries, either. He did document a subdural hematoma, fluid collections, but I don't believe he documented any brain injury.
Q. Well, he documented acute subdural bilateral hematomas.
A. That's correct. That's outside the brain.
Q. Including a tearing of the dura.
A. I don't remember him saying anything about a tearing of the dura. I don't remember that.
Q. We'll let the record speak on that. He talked about an intraventricular hemorrhage, and that's within the brain; is that right?
A. That's correct. That's subarachnoid.

Q. So that's within the brain?
A. Not really. It's not in the brain substance, it's in the fluid that is circulating within and around the brain. But it's not in the brain, per se.
Q. And this was a hemorrhage?
A. I'm sorry? I don't understand.
Q. It was diagnosed as a hemorrhage?
A. There was a small hemorrhage that was subarachnoid that was in the ventricular system, the lakes of fluid that are inside the brain.
Q. And he said that it was not likely from the subarachnoid injury?
A. Well, that's an opinion, but he's entitled to his opinion.
Q. Do you disagree with his opinion?
A. Well, yeah. In order for blood to get into the lakes, it has to get into the space underneath the arachnoid membrane, what I referred to before as underneath the ceiling. And so there had to be blood subarachnoid.
Q. And the cause for this kind of an injury would be a trauma?
A. One of the causes, absolutely.
Q. Okay. What are the other causes? Aneurysm?
A. Aneurysm is a cause.
Q. Metabolic issues?
A. I wouldn't -- it would be -- I wouldn't consider metabolic

disease as a cause of subarachnoid hemorrhage.
Q. But according to Dr. Hart, all the other causes have been ruled out leaving trauma as the most likely cause.
A. That was his opinion, yes.
Q. He also found likely acute hemorrhage over the cerebellar hemispheres with blood over and under the tentorium?
A. Yes, sir.
Q. And previously you said this could have been from flowing blood.
A. I don't remember.
Q. The multiple focal points of injury or hemorrhage on the brain, or in the head, could have flowed from one area to the other?
A. I probably said that at the trial in November. I don't remember saying it today. I may have said it.
Q. Would you agree or disagree that it would be unlikely from blood to flow from the other spaces into the tentorium?
A. It's a question that doesn't make sense neurologically, so I can't answer it.
Q. So if there is a hemorrhage in the tentorium, a subdural hemorrhage, are you saying it is likely or unlikely that these would have been caused by the same injury?
A. So, I'm assuming there's an injury?
Q. Yes.
A. So there's still a problem with the question, and I'm

happy to help you clarify, because the question doesn't make sense neurologically.

Q. Go for it.

A. The tentorium is a piece of skin, and that piece of skin is the same piece of skin as the dura. So when there is a subdural hematoma or a subdural hemorrhage, then there's blood in between that piece of skin and the brain.

Now, that piece of skin covers that back lobe of the brain called the cerebellum, and I think what you're referring to is Dr. Hart's, I guess, pointing out and finding it very important that not only is there blood above that piece of skin -- in other words, a subdural hematoma in between the main part of the brain and the piece of skin -- but there's also a blood collection between the back lobe of the brain, the cerebellum, and the piece of skin. So that's over the tentorium, or supratentorial, and infratentorial.

So the way I'm understanding your question is, do I agree with Dr. Hart that isn't that an important finding, that not only is there blood above the tentorium, above the piece of skin, but there's also blood underneath it. And I don't. I think it's the same blood and it just tracks from above to below.

Q. Now, all those different, for lack of a better term, either injuries or hemorrhages within the head, you're saying none of those are brain injuries. But would you call them

injuries?
A. I'd say they're medical problems. In other words, if somebody with hemophilia bleeds, would I call that an injury? No, it's a medical problem. That person is bleeding. It might cause an injury, but it's a medical problem. It's a very significant one. An injury to me implies that there's been some kind of impact or trauma or something, and I don't want to concede that.
Q. I know. Your argument seems to be a little bit circular, because you're saying that there is some sort of blood caused here. You've already said that we've ruled out the other causes, so that the most likely other cause here is trauma. But now you're saying that you're not willing to say that this is an injury, even though it's the only remaining cause that it could be.
I mean, in your practice, you do a differential diagnosis; is that right?
A. I do, yes, sir.
Q. So you go through, you look at the different potential problems and you rule them out. If everything has been ruled out except for trauma, what else are you left with?
A. That's right, and that's how Dr. Strickler came to her conclusion. And I disagree with that. I don't believe that there was trauma.
Q. So then what was the other cause?

A. There was a chronic medical condition that allowed subdural hematomas to develop either spontaneously or from a minimal injury, one that we would never pay attention to otherwise, and that chronic medical condition is called a subdural hygroma, and that's what caused the acute subdural hematomas that you are referring to that are usually caused by an impact injury or some kind of trauma. But in this case, I don't believe they were.

Q. Okay. What was their causation, if it was not from trauma?

A. A complication of chronic subdural hygroma --

Q. What --

A. -- as I stated in my report.

Q. I'm sorry to interrupt you. But a hygroma is a condition? It's where there is fluid on the brain; correct?

A. Fluid in between the brain and the inside of the skull, that's right.

Q. And on an MRI scan, it's indistinguishable -- or it's hard to tell exactly what it is. It does not look like CSF, like you described, and it doesn't look like blood?

A. That's right. Fresh blood. It doesn't look like fresh blood.

Q. So it looks like some sort of other fluid, possibly a mixture of CSF and blood?

A. Yes.

Q. All right. They don't spontaneously occur, do they?
A. Hygromas?
Q. Yes.
A. To our knowledge, they don't.
Q. In infants.
A. I'll say in many cases, we don't know what the reason is. And we blame it on birth, but we're not positive.
Q. Now, you go back to saying you blame it on birth. You have the Rooks article; is that correct?
A. Yes, sir.
Q. All right. Will you look at the Rooks article again, in the second to the last sentence in the Results section?
A. Second to last sentence? Okay.
Q. "Most SDHs" -- subdural hemorrhages, in this case -- "present at birth were" -- is that greater than? -- "three millimeters and had resolved by one month, and all resolved by three months on MR imaging." Is that right?
A. I'm not on the right page. I'm on Page 1085.
Q. I'm reading from the top in the Results section, in the Introduction.
A. Oh, in the abstract?
Q. Yes.
A. Oh, sorry. Hold on. Okay, try me again.
Q. "Most subdural hemorrhages present at birth were greater than three millimeters" -- is that right, or is that less than?

A. Less than. Less than three millimeters.
Q. -- "less than three millimeters and had resolved by one month, and all resolved by three months on MR imaging." Is that right?
A. You quoted it right. It's very misleading.
Q. Oh, okay. So, you're claiming that this is some sort of birth injury. Dr. Hart presented you with evidence in the Rooks article that there were no studies that have shown that there's been injury from birth past three months. Where are you -- other than what you said was experience, on cross-examination, what other studies are you relying on?
A. Well, they are in front of me here in this pile, and I can name several of them offhand. The Cho article that I referred to, which is Exhibit 29. The four K.S. Lee articles basically --
Q. Let's go back. Let's talk. The Cho article, which you said is Exhibit -- I'm sorry; I don't have the right numbers, unfortunately.
A. I have it as Exhibit 29.
Q. I have the book in front of me, I'm sorry. What was it in the book, do you recall?
A. I could tell you. One moment. 22.
Q. All right. Where does it -- show me in the article where it talks about birth injuries lasting longer than three months.
A. If you take a look at Page 2 of the article, which is

actually Page 274 --
Q. Sure.
A. -- on the top, it's the fourth column, "Cause of SDFC." So the term they're using is subdural fluid collection. So, what was the cause? If we look, one, two, three, four, five, six, at least, that I can count, are what they call idiopathic. Idiopathic means they had no clue what caused it. When there is no clue what might have affected a young infant to cause a subdural hygroma, the only trauma every young infant has been through is birth.
Q. Okay, so it doesn't attribute it to birth, you're attributing it to birth.
A. In this case.
Q. You're the only person that has made that leap. The article doesn't make that leap.
A. I don't know. I'll have to check the discussion.
Q. You said that you used this to form the foundation of your belief, so I'm assuming it supports you.
A. It does support me.
Q. Okay.
A. I'm sorry; are you waiting for me? I'm waiting for you.
Q. You said you were going to find it in the discussion. I was waiting for you.
A. All I see is that they can't explain why these children had subdural hygromas, but they did present themselves within a

few months after birth.
Q. All right. So it's unknown?
A. They called it unknown.
Q. All right. And so, when you say it's unknown, it's possible that it could still be some sort of trauma that was not seen?
A. Sure.
Q. It's possible that it was trauma that was inflicted and nobody is reporting?
A. Sure.
Q. It's possible that it was trauma that the caretaker that's there just didn't see?
A. That's right.
Q. So unknown doesn't necessarily have to -- you made it sound like unknown automatically was birth trauma.
A. Yes, sir.
Q. Unknown is unknown?
A. Unknown is unknown. But they did make allowances for other types of traumas that they did identify in this article.
Q. All right. So which other ones talk about birth trauma being a cause?
A. I'll take a moment.
Q. Because it's my understanding, Dr. Scheller, this book you provided to defense counsel; is that correct? The articles in this book, not necessarily the book, itself.

A. Yes, sir.
Q. And you provided that book to them saying that these articles supported your foundational beliefs that you wrote in September of 2017; is that right?
A. That's right.
Q. All right. So I'll give you a second.
A. I'm looking at the K.S. Lee article in 1994.
Q. In the book, which one was that?
A. I'll find it in a moment. 18 in my version of the book.
Q. Okay.
A. And I'm reading from Page 553, where it says, Discussion. "TSH" -- which stands for traumatic subdural hygroma -- "occurs most often at the extremes of life." That's the first sentence. Skip a sentence, and then the third sentence says: "In the infant the brain is quite compressible, and in the elderly, brain atrophy creates a potential space where fluid can easily collect." So it's the same idea.
Q. Where does it say birth?
A. Well, that's the only thing I know that happens to every child, that happens in the first few months of life.
Q. All right. This, like many of the other K.S. Lee articles, all refer to trauma; right?
A. Yes, sir.
Q. You're saying that your hygroma is a nontraumatic injury. So how do all these articles that refer to trauma support your

finding that you claim is a nontraumatic injury?
A. Every one of these articles, in addition to mentioning that subdural hygroma comes from trauma, also mentioned that trauma can be trivial or minimal, and to me, that's no trauma.
Q. Okay. So you're playing a semantics game where minimal trauma, it just equals no trauma?
A. Yes, sir.
Q. So now you are the one that gets to determine what level of trauma is actual trauma versus no trauma?
A. All these articles did.
Q. What is minimal trauma?
A. That's minimal trauma. I just hit myself on the head with this.
Q. Did it cause you a seizure?
A. No, sir.
Q. Did it cause you vomiting?
A. I don't have a preexisting condition.
Q. Going back, you said you provided this book, and so far you've only been able to provide one article, after several minutes you found one article that you believe supports you, but it doesn't actually mention birth trauma in the discussion.
A. That's right.
Q. And you said you provided this book to defense counsel, or the articles in the book to defense counsel?
A. Yes, sir.

Q. You stated that these are the articles that helped form your opinion?
A. That and my experience, yes, sir.
Q. And that your opinion was written in September 2017, is when it was dated?
A. Yes, sir.
Q. So how did you rely on two articles that were dated in 2018? Articles that were written after, how did they help provide the foundational beliefs in your report written a year earlier?
A. You're right. If they were written in 2018, then they did not help me write my report in 2017.
Q. So this was a mistake?
A. Oh, I don't know that it was a mistake. The attorney called and said, what articles did you rely on, and these are the articles in my knowledge base.
Q. Okay. So when he asked for the articles that you relied on, you provided articles from after your thing was written, and you claimed that that's what you relied on?
A. The principles and the ideas in the articles are ideas that I'm very familiar with from my experience and from older articles. But you're right, I wrote my report in 2017, and there's at least one article from, I believe it's from Lee, in 2018. Unless -- it is possible that I did get an early release. Sometimes they do have early releases of articles and

I do get them. So I'm not sure. But it is possible that I didn't see it until after.

Q. Now, you also referred to these as chronic subdural hygromas?

A. Yes, sir.

Q. Now, that is a term that is in disfavor; is that correct?

A. By Dr. Wittschieber, sure.

Q. All right. So which of these other articles talk about chronic subdural hygromas? They refer to subdural hygromas, they refer to chronic subdural hemorrhages, but they don't refer to chronic subdural hygromas, do they?

A. They absolutely do, and I'm happy to find them.

Q. Sure, find one for me.

Are you still on the first article, or are you on other articles now?

A. I'm going through all of them.

Q. Just the articles that were admitted.

A. Sure.

Q. There were a handful I know that were not admitted, and that would not benefit anyone at this point.

A. I'm reading a sentence from K.S. Lee's article of 1998.

Q. Was that what was provided as 16? "The Pathogenesis and Clinical Significance of Traumatic Subdural Hygroma"?

A. Yes, sir.

Q. Okay. Where does it mention chronic subdural hygroma?

A. It says the following words, which are: "Subdural hygromas" -- which is SDGs, which is Dr. Lee's shortening of it -- "develop as delayed lesions." I'm in the section Natural History and Evolution. "Then they change over time. The fate of subdural hygromas depends on the dynamics of absorption and expansion. They continue to grow for a time, and then reduce in size." So that's what chronic means. In other words, they're there for a time. The word is not mentioned, but I'll find it. He says it elsewhere.

Q. Okay. He does refer to subdural hygromas and he does refer to chronic subdural hematomas or hemorrhages.

A. It's in the illustration on Page 29 in K.S. Lee's article of 2015. "History of Chronic Subdural Hematoma."

Q. Which one is that, just so we're clear?

A. It's No. 19, and it's the illustration on Page 29.

Q. For the record, I think that was submitted as 32.

On that one, the image that you're saying, he puts a question mark after "chronic," though; right?

A. He does.

Q. That's odd. He doesn't put a question mark by hemorrhage --

A. That's true.

Q. -- or hematoma.

MR. KOCHERSBERGER: I object to the relevance of all of this, Your Honor.

MR. MARSHALL: If he thinks that his diagnosis of chronic subdural hygroma isn't relevant, then I don't know why we're here.

THE COURT: I'll overrule. You may continue.

BY MR. MARSHALL:

Q. Now, you had it in the graph, but did you see it in that article when you were flipping through, other than the picture?

A. I'm happy to look through it.

Q. I thought you were, sir. Let me remind you, these are the articles that are foundational to your opinion.

A. I'm sorry; what was the question?

Q. You said these are the articles that are foundational to your opinion that it's a chronic subdural hygroma, and now ten minutes later we still don't have one article that mentions the term chronic subdural hygroma from your foundational medical literature that you provided; is that correct?

A. That's correct, except for the one that I mentioned.

Q. All right. You said that -- there was one in the graph, but it's not in the body of the article. You haven't found it, have you?

A. I can't say it's not in the body of the article. I'm happy to take the time to read it, if you'd like.

Q. Well, I'm going to move on. It's been ten minutes, and you haven't found anything.

I'm going to jump back to the article you just mentioned,

the K.S. Lee article from 1998. That was 16 in the book. It actually illustrates some problems using the subdural hygromas. In the middle of the second paragraph in the Diagnosis on Page 599, it talks about: "However, an absolute distinction between a subdural hygroma and a chronic subdural hematoma is not only difficult, but actually impossible in a significant number of cases." Is that correct?

A. Yes, sir.

Q. And you -- jumping back to the term chronic subdural hygroma, Wittschieber, in the article that you said was foundational and put in your book, mentions that the term chronic hygromas should be "principally avoided as it is a very imprecise and pathogenetically insufficient description."

A. That's his opinion, yes.

Q. So his opinion is your description of the diagnosis is very imprecise and pathogenetically insufficient?

A. That's right.

Q. Also in that Wittschieber article, it talks about -- again, it's in the abstract. "But if other infrequent reasons can be excluded, the presence of subdural hygromas strongly suggests a post-traumatic state and should prompt the physician to search for other signs of abuse."

A. I'm sorry; what was the question?

Q. That's what it says; right? It talks about subdural hygromas --

A. Well, that's actually what Dr. Wittschieber says.
Q. -- being in a post-traumatic state?
A. That's right.
Q. Trauma being inflicted? In fact, in the article by Wittschieber, he basically says there are two primary causes for the subdural hygromas. One is the remains of a previous subdural hemorrhage, and the other is, "Subdural hygromas have been verified by traumatically induced tears in the arachnoid membrane"?
A. That's what he writes.
Q. You found another cause somewhere?
A. The cause I explained to you earlier, about the brain moving away from the inside of the skull.
Q. Okay. And that is in elderly patients; right?
A. Elderly and infants.
Q. And despite that, you said that "C" did not have extra space, extra axial space?
A. I don't understand the question.
Q. Are you now saying that you think that he had extra axial space and that a hygroma magically appeared in his head?
A. That's how hygromas do appear.
Q. By magic?
A. From space that opens up between two pieces of tissue that should be squeezed together.
Q. Except the article says it's from trauma.

A. Dr. Wittschieber believes that, sure.
Q. So you think that it's not just fluid, like CSF, that would normally fill a space like that, you are saying that it is hygroma, which is some sort of mixed density fluid that contains another fluid, most likely blood and CSF, that is nontraumatic filling a space that happens to appear?
A. That's right.
Q. Okay. Can you show any article that shows chronic subdural hygromas of a minor that were nontraumatic that caused either chronic subdural hematomas or the injury like you were describing? Were there any articles that supported your opinion?
Wittschieber said it was trauma. The Lee article said it was trauma. The Cho article I think said it was trauma, I don't remember. But which article supports your idea that it was a nontrauma formation of a hygroma in an infant?
A. Well, at least two. You were the one that was pushing the idea that idiopathic is not trauma, and so in the Cho article --
Q. Ultimately you agreed, unknown is unknown; right?
A. I do agree, unknown is unknown. But to me, unknown means that this child suffered a birth injury, because that's the only trauma we've all been through.
So the Lee -- I'm sorry. The Cho article has a number of cases of subdural hygroma without any known trauma, and then

the Park article -- no, it's not Park. It's Lee. The Lee article from 2018 also has a number of cases of subdural hygroma that are not trauma related.

Q. Okay. Jumping back, you said that the only trauma you think is a birth trauma. In this case, "C" had other signs of trauma, did he not?

A. No, sir.

Q. Okay. He had a bite on his shoulder. That was not a trauma?

A. If you can explain to me how a bite on the shoulder can cause something wrong with the brain, then I'm very happy to listen.

Q. Your definition said any unexplained trauma. I'm asking for any trauma on the body.

A. That's explained trauma.

Q. Okay, that's explained trauma. You said there was no other trauma. A bite mark is trauma?

A. A bite mark is trauma, and it's trauma to the skin.

Q. Okay. He had a circular abrasion in the middle of his back. That's a sign of trauma?

A. Might be.

Q. Okay, what else could it be?

A. Sleeping on something, being pushed against some kind of toy. It could be anything.

Q. What about the tear in his lip?

A. In his?
Q. Lip.
A. Might be a sign of trauma, might not be.
Q. Okay. So you're ignoring findings from the physical examination that you said was very important?
A. I'm ignoring findings that are not conclusive in any way.
Q. Okay.
A. A skull fracture in conclusive.
Q. Instead, you're relying on something that you think from your personal experience exists when there's no data to support it, and you're saying that you're going to ignore the actual factual findings of medical doctors that saw the patient?
A. That's not at all what I said, but you're welcome to interpret it however you'd like.
Q. Okay. How is a subdural hygroma a circulation condition?
A. All fluids in the body circulate, including spinal fluid and including dural fluid. The dura is a piece of skin, but fluid does circulate in it. And so that's a circulation condition.
Q. Does it have a membrane?
A. I'm sorry?
Q. Well, never mind.
How did the blood on "C's" brain -- you said he had a seizure basically because there was blood on his brain. How did he get blood on his brain?

A. Well, from either a leaky membrane or from a very small blood vessel crossing the surface of the brain to the inside of the skull that leaked, that was stretched and leaked some blood onto the brain.
Q. A common way for those to be stretched and leak is shaking or trauma, a whiplash injury?
A. It might happen.
Q. But you still say it is a nontrauma finding?
A. Yes, sure.
Q. Traditionally the arachnoid layer is an impermeable membrane. But you're saying it could be leaky?
A. The idea that's put forth in all these articles -- there's a problem. The problem is -- when you do an MRI scan and look at the spinal fluid and you look at the dural fluid, they're a different color. And so there is fluid there. A lot of people think there's spinal fluid that seeps through the membrane and then combines with dural fluid and makes it thicker. Nobody is really sure. But it does seem to be a mix of spinal fluid and thicker dural fluid.
Q. You also talked about retinal hemorrhages.
A. Yes.
Q. Can trauma cause retinal hemorrhages?
A. Sure.
Q. You mentioned that, I think it was the veins, that blood backed up in the veins. Are you saying that there was a clot

in "C" that caused these injuries?
A. No, sir. Just a backup.
Q. And correct me if I'm wrong, but you're saying it's your understanding that he had increased cranial pressure that caused his retinal hemorrhages?
A. Yes, sir.
Q. All right. Where in the medical records did you see that?
A. The fact that there was fluid in a place where it doesn't belong is evidence that he had increased intracranial pressure.
Q. But you said it was minor because it wasn't from a trauma.
A. It's minor in most people, but it still causes pressure. There's something where it doesn't belong.
Q. What in the workup indicates that there was increased intracranial pressure?
A. Fluid in a place where it doesn't belong, and blood in a place where it doesn't belong.
Q. But it wasn't any -- is it the Cushing's Triad? Were there any signs of a Cushing's Triad in "C's" case?
A. I didn't see any.
Q. Is the Cushing's Triad generally something you'd look for in intracranial pressure?
A. If there's a very dramatic increase, yes, sir.
Q. So you're now saying that a very minor increase in intracranial pressure will lead to retinal hemorrhages of a minor?

A. I never said the word minor. I think you're going from dramatic to minor, and I'm happy to either try to answer the question or you could ask it a different way.
Q. I've asked you repeatedly, what in the medical records indicates there was an increase in intracranial pressure?
A. Fluid in a space where it doesn't belong.
Q. And that's your only answer?
A. Yes, sir.
Q. Just so we're clear, there were acute findings in the neuroradiology exams; is that right?
A. Yes. We went over those.
Q. What's the threshold for causing retinal hemorrhages?
A. I don't think anybody knows. I don't know.
Q. How long is the -- is there a duration of pressure to cause the hemorrhages?
A. Current thinking is that it's a sudden increase in pressure. So when there is a rapid rise in pressure, that's what's going to cause the backup in the veins in the retina.
Q. Now you're the one using dramatic terms. You just said a rapid rise. What is any indication that there was a rapid rise if there is no indication in any form from the Cushing's Triad in this case?
A. Again, you've got fluid in a place it doesn't belong, and then out of the blue, you then have bleeding into that fluid. That's going to increase the pressure.

Q. Okay.
A. But there was no indication of Cushing's Triad.
Q. But you also agree that retinal hemorrhages could be from trauma?
A. Sure. Accidental or abusive.
Q. That subdural hematomas could be trauma?
A. Accidental or abusive, yes, sir.
Q. The acute subdural hematoma in this case could have created an increased intracranial pressure?
A. It might have.
Q. You stated in your first interview that subdural hematoma is the body's reaction to impact trauma?
A. That's the number one most common cause for subdural hematoma. And again, the trauma to the head, of course.
Q. Is your opinion that subdural hygromas are more or less often caused from trauma?
A. Are we including birth trauma or not?
Q. Trauma.
A. And are we talking about infants?
Q. Infants.
A. I think it really depends. If we can follow the progression of the head size from birth, then the most likely cause is birth trauma. And if we cannot, if we don't see a head size acceleration until a few months after birth, then there probably was a minor trauma that caused it.

Q. Is it your opinion that "C" had an accelerated head growth?
A. Yes, sir.
Q. So 75th percentile to the 90th percentile you would consider accelerated head growth?
A. Yes, sir.
Q. And it's all a matter of what data point you pick, because when he was born, he had a 98th percentile head; is that correct?
A. Yes, sir.
Q. You never listed in your report, though, an acute subdural hematoma, did you?
A. I didn't use those words.
Q. Or subarachnoid hemorrhage?
A. I didn't use those words.
Q. And I know you haven't used this term, but I just want to understand. Are you saying that your subdural hygroma would have caused an acute subdural hematoma through a re-bleed?
A. I didn't use the term re-bleed, but some people might use that term. A re-bleed just means a leaky membrane. I didn't use that term.
Q. But is that essentially what you're saying, that the subdural hygroma caused the bleed that led to the acute subdural hematoma?
A. I'm sorry; could you ask the question again?

Q. I mean, you didn't use the term re-bleed, but is that essentially what you're saying, that the subdural hygroma bled causing the acute subdural hematoma?
A. So, re-bleed implies that there was an original bleed. So let's pretend we have a completely different case, not "C." A child falls off the porch --
Q. Go ahead.
A. I'm just trying to explain. I don't have to.
Q. Go for it.
A. If a child falls off the porch and gets an acute subdural hematoma, and then six months later in that spot has a new acute subdural hematoma without any new trauma, that's a re-bleed. There was an old bleed and now there's a new bleed.
I don't know that "C" ever had an original acute subdural hematoma before the events at eight months old.
Q. So now I feel like we've started back at square one with you, Dr. Scheller. You have not provided any evidence that this hygroma came from anything other than a traumatic event; is that correct? And your evidence says that you were saying that this is a birth trauma?
A. I can't agree with either one of those, but I'm happy to elaborate.
Q. What is your diagnosis for "C.A."? What is it? What caused his injury?
A. He had a chronic subdural hygroma either caused by birth

or caused by some unknown event in the first few months of life that then had a complication when he was eight months old, bled, caused a seizure, and that was the end of the story.

Q. What evidence was there of anything other than trauma for "C.A."?

A. The fact that there was no evidence of trauma anywhere near the head.

Q. So then you disagree with the consensus statement, this is Government's Exhibit 8, that subdural -- under the Birth Trauma section, it indicates that no evidence at birth subdural hemorrhages cause re-bleeds?

A. I didn't use the term re-bleed, but I definitely disagree with the consensus statement. So that's fine.

MR. MARSHALL: Okay. No further questions, Your Honor.

THE COURT: Is there redirect?

MR. KOCHERSBERGER: Nothing further, Your Honor.

THE COURT: All right. Dr. Scheller, thank you. I know you traveled in from somewhere on the East Coast.

THE WITNESS: I've got a whole bunch of exhibits here. I don't want them to get lost.

THE COURT: Why don't you just put them on the bench right there, and I'll let counsel sort through them.

MR. MARSHALL: Your Honor, I'm not sure which numbers they were, but I would ask to move in the articles we mentioned

today, the Rooks article and -- Wittschieber is already in. So Rooks is the only new article. I'd ask to move that in as evidence, or at least to be a part of the record.

MR. KOCHERSBERGER: I have no objection, Your Honor, but I will note that the original Notice, the documents that are in the binder, attached to the one that was No. 20, the Rooks article is there. So if we admitted 20, the Rooks article may be appended to the exhibit that originated from 20.

THE COURT: Is it Defendant's Exhibit 20?

MR. KOCHERSBERGER: No, it would have been the Notice No. 20. It was one of the K.S. Lee articles, and I believe -- I think it's No. 33. It actually has the Rooks article in it. I just discovered that earlier. Let me make sure.

Yes, Defense Exhibit No. 33 is actually the K.S. Lee article and the Rooks article. So it's in there that way. It just got there by mistake.

THE COURT: Should it be a separate exhibit?

MR. KOCHERSBERGER: I can pull it out of this and make it -- do you want me to call it a Defendant's exhibit?

MR. MARSHALL: It was used in cross, so I'd prefer that it was a Government's exhibit. I'm not sure what number we're on. 30 or 31.

MR. KOCHERSBERGER: I think you should be on 30.

THE COURT: You don't object; right?

MR. KOCHERSBERGER: I do not object.

THE COURT: Okay. Then it will be -- what's the last number? All right, Government's Exhibit 31 is admitted.

(Government Exhibit No. 31 admitted.)

THE COURT: All right, I entered an order. Did you all see that order yet?

MR. KOCHERSBERGER: Yes, sir.

MR. MARSHALL: No, Your Honor.

THE COURT: I'll wait until Mr. Marshall finishes.

Now, I'm assuming you're going to order a transcript from this hearing.

MR. MARSHALL: Yes, Your Honor.

THE COURT: So what I thought is, in terms of the written closings, two weeks from when the transcript is completed for the Government, and then defense will have two weeks to respond, and then if the Government wishes, a week to do a reply. Now, is that realistic?

I'm just trying to -- again, this case, we've got to move this case forward, and so that's the schedule. Because then I've got to have some time to sort through all of this. And then, as you see in that order, I'm requiring you to cite to places in the record.

Now, if you all confer and if you need an additional week, I have no issue with doing a stipulation where the Government gets three weeks, and then the defense gets three weeks, if you all feel like you need that.

All right, anything else for today?

MR. MARSHALL: No, Your Honor.

MR. KOCHERSBERGER: No, Your Honor.

THE COURT: Then we will be in recess. Thank you.

(Proceedings adjourned at 3:13 P.M.)

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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW MEXICO

UNITED STATES OF AMERICA, Plaintiff, vs. PATRICK DURAN, Defendant.	No. NO. 1:14-CR-03762-WJ Daubert Hearing - Vol. 3

CERTIFICATE OF OFFICIAL COURT REPORTER

I, Mary K. Loughran, CRR, RPR, New Mexico CCR #65, Federal Realtime official Court Reporter, in and for the United States District Court for the District of New Mexico, do hereby certify that pursuant to Section 753, Title 28, United States Code, that the foregoing is a true and correct transcript of the stenographically reported proceedings held in the above-entitled matter on Monday, August 26, 2019, and that the transcript page format is in conformance with the regulations of the Judicial Conference of the United States.

Dated this 6th day of September, 2019.

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